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POPULAR

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OF

Medicine.

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OF

Medicine.

BY

SHIRLEY PALMER, M. D.

Falsa vincere veris.

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PREFACE.

MEDICINE is distinguished among the Sciences, not more by the dignity and beneficence of its character than by the difficulties of its study and the deep obscurity in which the objects of its research are frequently involved. A long life of undivided labour will scarcely suffice for the acquirement of even a reputable knowledge of its various branches. The most profoundly versed in its theory,—the most experienced and successful in its practice,—are sometimes perplexed in determining the precise seat, nature, or treatment of a disease; and reduced to the painful necessity of acknowledging their want of information, and deploring the inadequacy of their resources.

These truths conceded, every attempt to instruct the public in the discrimination and management of particular diseases, must be as futile in execution as absurd in principle. No one professes to rectify the derangements of even an ordinary piece of mechanism unless he be duly qualified by previous education, for the undertaking. Who then, unprovided with the light and the instruments of science, shall presume to repair the injuries, or regulate the deviations of a machine the structure of which is far more delicate and complex than that of any work of human production,—the nature of whose governing principle, the human intellect is probably destined never to comprehend? Yet, strange as it may seem, there are persons who affect to possess, without the aid of professional education or experience, a fund of knowledge perfectly sufficient for the discrimination and treatment of every disease, however obscure or perilous, which may present itself

to their notice. Such knowledge, if such there be, is obviously derived from inspiration or acquired by instinct. But the age of miracles has long since passed away: and the arrogance of these impotent pretenders would be as ludicrous as despicable, if it involved a subject less deeply interesting than that of human welfare.

Still, civilized man should be taught by a clear exposition of their source, character and operation, to protect himself from the influence of the various EXCITING CAUSES OF DISEASE; and thus avert the sufferings which they may otherwise inflict. He should possess such a knowledge of the great truths of Medicine as it behoves an intellectual being to acquire, and the liberal system of education employed in this enlightened epoch, to confer. He should, at least, know so much as may enable him to elicit from his professional attendant, and to comprehend, an explanation of the nature of any disease under which he may suffer; and the leading principles of the treatment to which he may be required to submit. And surely the talent or integrity of that practitioner may be fairly questioned, who cannot render his views and opinions intelligible to a common intellect; or disingenuously seeks to conceal them beneath the vulgar cloak of mysticism and jargon by which the science has already been too long disfigured and degraded. Legal penalties and prohibitions will avail but little against ignorance and empiricism while the darkness so congenial to their existence, continues to obscure the public mind. The character and respectability of the medical profession can only be effectually improved and elevated by rendering deficiency and unfounded pretension in the practitioner, as easy of detection as they are impolitic and disgraceful.* This beneficent purpose, nothing but the diffusion

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* To one most powerful instrument of degradation of the medical character, it may not here be irrelevant to advert. This is the vile and objectionable practice pursued in the country, of attending the poor by *Contract*. Little argument or illustration would be requisite to prove that, while a source of equal dissatisfaction to the practitioner and the patient, such mode of attendance is deeply and directly hostile to the best interests of both. Impressed with this truth, MR.

of popular knowledge can achieve. Such diffusion, the present volume is principally destined to attempt.

The professional reader who shall condescend to peruse these pages, may, perchance, descry some bold deviations from commonly received opinion respecting the origin, and from ordinary practice in the treatment, of several diseases. Ten years of close and extended observation have elapsed since a great revolution was effected in the writer's early views. Subsequent experience, while modifying and correcting, has served only to confirm, the change insensibly wrought upon his mind by the irresistible evidence of facts. The lapse of such a period will probably suffice to exonerate him from the charge of unbecoming or intemperate haste in the promulgation of his opinions. Sensible that they can derive their only value from utility of application in practice, he prefers no other claim for them to the public notice and confidence. His sole anxiety is that they may be fairly tried by the unerring test to which, during ten years, he has been rigorously,—and, unless he labour under an egregious delusion, most successfully,—subjecting them.

While demonstrating the pre-eminent rank occupied by the brain

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SMITH, of Southam in the county of Warwick, has most honourably devoted his time, talents and fortune to the introduction of a system of DISTRICT-DISPENSARIES, by which the degrading custom of contracts may be superseded. Many liberal men, as well private as professional, have warmly seconded the beneficent enterprize. But much time and labour must be expended in the dissemination of its principles,—many erroneous notions of self-interest,—many deeply-rooted prejudices—must be torn up, ere the new system can be extensively introduced. The evils of the present plan, if generally known, would be as generally execrated and decried. Every one capable of duly appreciating and feeling them, must applaud the unwearied exertions of Mr. Smith. These are no common times. All the intellectual energies of the land have not been so completely exhausted in the great struggle for civil and religious liberty; but that some eloquent member may be found to plead in the Senate, the more unostentatious cause of physical suffering among the poor,—to break the cruel thraldom imposed upon them in the hour of danger and distress; and achieve their lasting "Emancipation" from the bondage and the curse of contract-attendance and contract-physic. See Mr. Smith's *Observations on the Prevailing Practice of supplying Medical Assistance to the Poor*, 8vo. London, 1819;—Mr. Hulbert's *Essay on Farming the Sick Poor*, 8vo. London and Shrewsbury, 1824;—and Dr. Loudon's *Letter addressed to the Governors of the Leamington-Spa Charity*, 8vo. 1829.

and spinal marrow, in the animal economy, and exposing the influence which they exert in the production and sustenance of its diseases, the writer would yet anxiously admonish the young practitioner against the now too prevalent error of hastily referring every obscure or ambiguous complaint to a cerebral or spinal origin. A vigilant attention to the condition of these organs will, indeed, throw strong light on many intricate and otherwise inexplicable affections; but the blind adoption of this, as of any other system of doctrine, is equally dangerous and absurd: and will ultimately lead to that narrowness in the view, that negligence in the minute observation of the phenomena, of diseases, which have been so deeply injurious to the improvement of medicine as a science. It would ill become one who aspires to the character of a philosophic writer, however humble, to advocate the exclusive application of one system, while exposing and denouncing the extravagant pretensions of others by which it has been preceded.

In the slight and rapid delineations of disease, which the following pages exhibit, the mind deeply imbued with medical knowledge, will discover little to compensate for the labour of perusal. The majority of them may indeed be considered as mere *Sketches*, principally designed for the instruction of the popular reader, and the young professional student. To the latter, it is hoped they may be found useful, as conveying a correct although faint outline of the subjects of his future study. With a view of farther enhancing any little value which they may possess, the various complications of all the more important diseases have been sedulously traced in a manner not yet attempted by British writers; and a reference has been made to all the best sources of literary information on the various subjects under discussion. A catalogue of medical works, far more extensive, might have readily been given; but the author, preferring utility to display, has restricted his notice to the best of those which he has, himself, perused. With the exception of these literary references, and an occasional illustration of some striking fact in physiology or practice, the Notes

appended to the volume, are merely such as will be found essential to the popular comprehension of the various truths which it has been necessary to expose. For any needless repetition,—any undue minuteness or exuberance of explanation,—which may be detected, an apology will be sought in the solicitude of a popular writer to make deep and distinct impressions of the leading principles of the science which he professes to illustrate, on the popular and previously uninstructed mind. A forgetfulness of the ignorance of first principles in the audience which they address, constitutes an error, as grave as it is common, in those who undertake the beneficent work of elementary instruction in the various sciences.

In the constitution of an Essay designed principally for the dissemination of popular knowledge, it has not been deemed improper to relax somewhat from that unbending severity of style which so signally befits the character of purely scientific writings; and sheds light and grace, peculiarly its own, on their most intricate discussions. It is much to be lamented that, in literary compositions destined for the exclusive perusal of scientific men, this becoming austerity is too often sacrificed to a mistaken taste for idle and meretricious ornament.

Whatever be the defects,—whatever the fate,—of this imperfect Essay, the author will feel satisfaction in the consciousness that it possesses at least the merit of pure intention; and that the sins of selfishness or bigotry can never, with justice, be imputed to it. While anxiously endeavouring to communicate, in a popular form, the results of his own experience on subjects the most deeply interesting to his species, he has consulted no mercenary feeling: nor, in exposing the errors of the popular writers by whom he has been preceded, arrogantly forgotten the deficiencies of his own mind and the fallibility of his own judgment. Confident, however, of the general correctness of the opinions which he has long been disseminating within the limited sphere of his personal influence, he fearlessly invites the scrutiny, and will bend with submission to the criticisms, of liberal and enlightened men.

To observations from any source less pure and elevated, as inflicting no pain and fraught with no indignity, he is prepared to listen without disquietude:—to encounter the denunciations of the bigot with silent disdain.

POSTSCRIPT.—The Text, and many of the Notes, of the present volume were written in 1827: the Preface, more than twelve months ago. Since then, the author has been induced to embody, in additional Notes, the more striking of the facts upon which his opinions rest; and to farther illustrate and confirm those opinions by the testimony of writers whose productions he had not previously seen. By this deviation from his first plan, the appearance of the volume has been delayed much beyond the period originally fixed for its publication. The author has thus, however, been enabled to concentrate within his pages, the results of more than twenty years' reading and practice.

Since then, also, he has possessed the advantage of attending a course of Demonstrations of the Brain by Dr. Spurzheim; and acquiring ocular conviction of the accuracy of the new anatomical descriptions of that most important organ. The views of this estimable and philosophic man respecting the operation of "moral causes" on the human brain, and its influence upon human diseases, so precisely resemble his own, as to inspire the writer with a confidence in their promulgation; which, however, deeply rooted in his mind before, it might otherwise have been presumptuous to exhibit. The admirable production of Dr. Abercrombie, on the Brain and Spinal Cord, and the excellent papers of Dr. Brown,* and Dr. Darwall,† on Cerebro-

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* See *The Glasgow Medical Journal*, Vol. I, p. 131.

† See *The Midland Medical and Surgical Reporter*, No. IV.

Spinal Irritation, he has subsequently perused with great interest. To all of them, especially the two latter, he may confidently appeal for the correctness of the facts and views developed in the ensuing pages. In finding his opinions sustained by such testimony, the author experiences no ordinary gratification. To reflect that he had erred with such men, would afford him consolation even in his failure.

Tamworth. June, 1829.

ERRORS FOR CORRECTION.

Page 8, line 9, for to, read *in*.
—— note * line 19, insert after air, *in its ordinary state of agitation.*
—— 198, line 4, after with, insert *comparative.*
—— 200, note, line 7, for Dewes read *Dewees.*
—— 209, note * line 8, after occupation, expunge *yet.*
—— 245, note * line 1, for observed, read *treated.*
—— 288, line 18, for may, read *can.*
—— 335, note * line 3, for Akalis, read *Alkalis.*

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INTRODUCTORY CHAPTER,

ON THE VARIOUS EXCITING CAUSES OF DISEASE.

THE Agents which destroy Man, or excite permanent or temporary disorder in the functions of his various organs, may be conveniently arranged under seven distinct heads, according to their peculiar character, or the medium through which they operate on the living system.

MORAL AND INTELLECTUAL AGENTS: The passions of the mind, joy, grief, anxiety; intense or long-continued application of the intellectual powers.

PHYSICAL: Violent or exhausting efforts of the muscular system.

INTESTINAL: Substances designedly or accidentally introduced into the intestinal canal, or generated within it: Articles of diet and medicine; the different intestinal poisons; and extraneous bodies, inanimate or living.

RESPIRATORY: Privation of respirable air; and the various aërial fluids operating on the system by the medium of the respiratory membrane,—as the irrespirable and deleterious gases, unfit for the sustenance of, or immediately destructive to, animal life;

marsh and human miasmata; the essence of the several specific infections; and mineral effluvia.

CUTANEOUS: Agents inducing local or constitutional derangement by contact or by inoculation, independently on mechanical violence; as the matter of the different contagious diseases; and the several cutaneous poisons, natural and morbid.

ATMOSPHERIC: Operating both by the respiratory and cutaneous surfaces, by the lungs and skin:—Extremes of heat and cold, of dryness and humidity; sudden vicissitudes of temperature.

EXTERNAL: Injuries inflicted on the system from without, mechanical and chemical.

The preceding arrangement, although it possess no claim to philosophical accuracy, will yet be sufficiently precise as a guide in tracing the outline of a popular treatise. Excepting congenital malformations and diseases,—those inexplicable defects of structure and of function,—which the infant sometimes brings with it into the world, Man, perhaps, exhibits few deviations from the healthy state, which may not be correctly referred to one or other of the preceding causes.

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1. Into the constitution, the history, and developement of the human mind and its various faculties and passions, the writer possesses neither the ability nor the presumption to institute a formal inquiry. On a subject involved in such impenetrable mystery, acknowledgment of ignorance, however humiliating, is

far preferable to impotent pretension and vague hypothesis. The period for constructing a substantial edifice of moral science is yet far distant, if ever it arrive. They, who have attentively examined the writings of the more profound and celebrated metaphysicians of the age, and traced the inconsistencies and contradictions with which the various systems of mental philosophy abound, will most correctly appreciate the difficulties by which such an essay is, in the present obscurity, surrounded. They will discern the danger of embarking on an ocean the depths of which, human genius has not yet fathomed;—where human enterprize has never yet succeeded in discovering a shore.

It will, therefore, be sufficient to contemplate and to trace, more rigorously than preceding writers on popular medicine have done, *the Influence of Moral Causes* upon the human organs in health, and in the various deviations from it, which they most commonly display. If it be shewn that Man, in proportion to the rank which he occupies in intellectual power and culture, is rendered more obnoxious to the invasions of disease; and that the derangements of health become more complicated and stubborn in the ratio of such natural and acquired elevation, a new light, interesting alike to the philosopher and physician, will be thrown upon the character and treatment of diseases. The absence of due notice of the manner and degree in which morbid affections are invariably modified by the intellectual constitution and culture,

the passions, propensities and occupations of the individual, forms, indeed, a signal defect of all the writings destined for popular instruction in the prevention and treatment of those diseases from which, especially in a state of civilization, Man is unhappily doomed to suffer.

Previously, however, to the formal entrance upon this investigation, it will be requisite to survey the elevated rank which the brain and spinal marrow occupy, with reference to the other organs, in the animal economy; and to demonstrate the influence which they unceasingly exert in the production, sustenance, or aggravation, of its various derangements. This influence, clearly discernible in the more perfect of the inferior animals, little observation will suffice to render pre-eminently conspicuous in man.

2. *Inordinate exertion of the physical powers*, except when carried so far as to tear asunder a bone or muscle, or induce dilatation or rupture of the heart or blood-vessels, and thus to become the direct source of lameness, aneurism or hæmorrhage, generally operates less as an exciting cause of disease, than in predisposing, and rendering the body more susceptible to its impressions. A similar influence, and obviously without the same exception, may be attributed to the habits of indolent and sedentary life. The effect of due exercise of the muscular organs in equalizing the circulation of blood by its propulsion from the centre to the circumference

of the system, and thus preventing those congestions, and consequent derangements of function, of the brain and other internal organs, which constitute the scourge of literary and inactive men, has not yet been duly appreciated by the popular mind. This effect, an eloquent and experienced writer* has emphatically designated as "nearly, if not altogether, omnipotent."

3. Respecting *Diet*, illustrated, as its practice has been, by several ably-written treatises,† the most injurious prejudices continue to infect the public opinion. Nor is this evil, involving so deeply the welfare of intellectual man, confined to the vulgar or unprofessional. By the unobservant practitioner of medicine, the value of dietetic precepts, in the treatment of chronic and even of acute diseases, is often imperfectly estimated; and their delivery governed, and defeated, by negligence and error: while the directions reluctantly extorted from the more zealous

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* See Dr. James Kennedy *On the Management of Children in health and disease.* Glasgow, 1825.

† There are many excellent practical remarks on diet, in the various publications of Dr. James Johnson, Dr. Scudamore, and other popular writers. But its principles have not been discussed with sufficient profundity. The observations of Mr. Abernethy, valuable as far as they go, are too limited and general to admit of individual application. Nor has Dr. Paris' celebrated work produced that beneficent effect, which might have emanated from such a source of information, upon the public mind. It contains some superfluous matter, exhibits several errors and deficiencies; and is neither conceived, nor executed, in that philosophic spirit, which, from the high professional character and talents of Dr. Paris, all, who know them, were led to anticipate.

and enlightened, are too commonly uttered in a tone of vagueness and indecision ill-calculated to inspire the confidence, and secure the rigorous attention, of the patient. Diet, in fact, is a subject of which all reflecting men acknowledge the importance; but few have profoundly studied the principles, or fully comprehend the application.

In the *Second Part*, an examination of these principles, and their establishment on a more solid and comprehensive basis than that upon which they have hitherto reposed, will be attempted. It will be there shewn that the introduction of food, in health, should be regulated, not only by the age, but by the habits and occupations of individual Man. The general application of dietetic rules and restrictions in acute, and some of the more strongly marked forms of chronic disease, will be, moreover, illustrated: and the digestibility, preparation, and admixture of various substances employed for human sustenance, in these islands, be sedulously reviewed.

To the employment and operation of *Medicinal Remedies*, a passing allusion will obviously suffice. The subject of the *Intestinal Poisons* and *Extraneous Bodies*, will, with the exception of intestinal concretions and worms, be also briefly dismissed after a cursory notice of their peculiar mode of operating on the system. They fall more correctly within the province of the writer on Forensic Medicine, and on Surgery.

4. The accidents arising from *Inhalation of different*

aërial fluids, either unfit for respiration, or directly deleterious to animal life; and the morbid affections induced by exposure to the noxious influence of marsh, human, and mineral effluvia, will require, for the purposes of popular instruction, no diffuse investigation. Their origin, distinctive characters, and mode of operation, will be succinctly explained. Death from exclusion of atmospheric air, as invariably resulting from the interposition of an external agent, will be most conveniently examined in the chapter on mechanical injuries. Of the means whereby human societies may be most effectually protected from the dangers with which they are constantly menaced by accumulations of impure or irrespirable air, and from the influence of endemic and infectious diseases, the consideration obviously belongs to the professed writer on Medical Police.

5. The same observation will apply to the morbid affections propagated by *Simple Contact*, or by *Inoculation*. Many valuable publications, British and Foreign, have been devoted to a diffusion of the knowledge of their prevention and treatment, as well as of the diseases comprehended in the two preceding paragraphs. To the most valuable of these sources of literary information, a reference will be duly made.

6. Of the *injurious Effects of extreme Heat or Cold*, and *sudden Vicissitudes of Temperature*, in their application to the human body, especially when rendered more susceptible to their influence by the enervating habits of luxury and refinement, it is needless to

adduce examples. They are sufficiently familiar. Every one has, some time or other, painfully experienced them. The operation of temperature upon the animal organs has seldom, however, been philosophically investigated:* nor is the most effectual mode of averting the consequences of its sudden variations generally understood. To render Man less susceptible to the impression of atmospheric vicissitudes, particularly to the cold, humid, and variable climate of a northern island, and protect his body from their baneful influence in the decrepitude of age, or during the visitations of active disease, con-

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* In estimating the operation of external temperature on the animal economy, and the comparative warmth of the different substances employed as articles of clothing, it has sometimes been overlooked that the body, to which all the experiments ultimately refer, possesses, within itself, a source of heat wholly independent on the atmosphere. In fact, upon the relative differences of the internal and external temperature, depends the whole theory of protecting the body from its extremes and vicissitudes. When, for instance, as commonly occurs in this climate, the temperature of the body steadily exceeds that of the atmosphere, the interposition, between them, of a woollen, leathern, silk, or other non-conducting substance will, by preventing the escape of animal heat, maintain a comfortable sense of warmth within. And when, during the more intense heats of summer, the atmospheric rises above the animal temperature, these very substances will most efficiently defend the system, if it be at rest, or not unduly excited by muscular exertion, from the external heat. Upon this obvious principle may be explained the "relief" which was experienced by Major Denham, from enveloping himself in "all the blankets he could find" during the "insufferable" fervour of an African noon. See *Narrative of Travels and Discoveries in northern and central Africa.* By Major D. Denham, page 114. Thus, also, snow being a much less perfect conductor of caloric than air, will, although proverbially cold, retain a degree of temperature adequate to the sustenance of life in warm blooded animals, during the severest rigours of a northern winter. The snow-hut of the Esquimaux, and the extrication of living men and animals from snow-drifts, after a burial of many days, may be adduced as incontrovertible evidence of this fact.

stitutes an object not more important in character, than difficult of attainment. The principal means whereby it may be attempted, are invigoration of the system by diet, exercise, exposure, and the external employment of cold water; protection of the surface of the body by interposing between it and the external air, various textures which possess the power of more or less perfectly intercepting the matter of heat; and the proper construction, arrangement, and warming, of human dwellings. To this investigation much time must be devoted and many experiments must be made in the calm and unprejudiced spirit of true philosophy, ere the obscurity, at present surrounding it, can be dissipated; and light and knowledge, sufficiently clear and precise for confident adoption in practice, be acquired.

With the exception of an attempt to trace the medium and expose the process, whereby violence inflicted on the body from without, destroys life, or deranges the general health; and thus to illustrate the opinions advanced in the ensuing pages, and correct the popular errors which prevail respecting their nature and treatment, *External Injuries* can evidently claim no elaborate discussion here. Their particular management can be properly taught by the professed surgeon alone.

Upon many of the subjects thus hastily reviewed*,

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* From the acuteness with which these topics have been discussed by Dr. Johnson in his work upon the *Influence of the Atmosphere*, it is much to be regret-

much prejudice and ignorance unfortunately exist. An attempt, however unavailing, to rectify the public misconception respecting them, will not be thrown away. It may, at least, excite a spirit of inquiry in professional minds more powerfully constituted,—more auspiciously circumstanced,—for observation than that of the present writer. Although failing to communicate, it may yet serve to elicit information. In subjecting controverted questions of opinion or of fact to the conflict of scientific discussion and to the test of practical experiment, the great cause of truth must ultimately be promoted. And even the most unskilful hand, while sedulously occupied in clearing away the rubbish of ancient prejudices and dilapidated theories, may, perchance, collect a few valuable materials for the erection of a system of medicine, at some future period, upon the unerring and eternal basis of science and philosophy.

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ted that this indefatigable writer has not applied his active mind more closely and extensively to them, with a view of popular instruction. Among the few errors into which he has fallen, one of the most conspicuous is the denunciation of silk as an article of dress.

CHAPTER II.

ON THE PRE-EMINENT IMPORTANCE OF THE BRAIN AND SPINAL MARROW IN THE ANIMAL ECONOMY.

In the composition of a treatise principally intended for popular perusal, a description of the structure of the brain and nervous system would be as irrelevant as an attempt at explanation of their mysterious functions, unavailing. They, who feel interested in this obscure branch of human anatomy and physiology, and solicitous to prosecute the inquiry, may consult the productions of the various writers by whom the subject has been most luminously and successfully treated. Justice, however, demands the acknowledgment that the minute anatomy of the brain has been more perfectly elucidated by the celebrated Dr. Gall, and his estimable and enlightened colleague Dr. Spurzheim, than by any other discoverer of past or present times. Every fresh attempt to despoil them of the reputation which they have so hardly and honourably acquired, will only recoil, as the past have already done, on the arrogant aggressor;* and overwhelm him with the derision and

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* See two celebrated articles in the volumes of the *Edinburgh Review*, for the years 1815, and 1826: and Mr. George Combe's manly refutation of the errors and misrepresentations, which they contain, in his *Letter to Mr. Jeffery*. See also a

defeat, which ignorance, arrayed in the imposing garb of criticism, can never fail ultimately to incur.

Upon the novel and peculiar opinions of these men, respecting the functions of the organs whose structure they have so admirably developed, it would require no common share of temerity or of experience, confidently to decide. A more appropriate subject for the exercise of the philosophic spirit has never yet been presented to the human intellect. Specious beyond all precedent, and apparently confirmed and illustrated by many striking facts and occurrences in the world around, Phrenology assumes a most imposing character, and presents a powerful claim to public attention. Yet the painful remembrance of many a past illusion, once equally bright with promise to human fortunes and improvement, inculcates a salutary lesson of circumspection. On the one hand, too strange and splendid, and, in the language of a gifted writer*, too " good," to be true in all the minuteness of its details, the theory of the German philosophers will yet be regarded by the reflecting mind as, on the other, too ingenious,—too clearly illustrative of several otherwise inexplicable phenomena

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powerful and eloquent vindication of the anatomical discoveries of Drs. Gall and Spurzheim from the aspersions of the late Dr. Gordon, in the fourth volume of the monthly *Medico-Chirurgical Journal.* The writer of the last specious but most unsound article in the *Edinburgh Review*, makes a needless avowal of his defective acquaintance with the anatomy of the brain. Without this, his utter ignorance of the ground-work of the science upon the character and destiny of which he has presumed to decide, would have been sufficiently evident.

* Dr. Archibald Robertson.

exhibited by man, in his various passions, propensities and diseases,* to be utterly destitute of foundation in nature. The introduction of error into their practical application can never be fairly or logically adduced as a proof of unsoundness in the principles of a science, especially where that science, yet in its infancy, is surrounded by extraordinary sources of doubt and difficulties of investigation. Whatever be the ultimate fate of their doctrines, much is due to these celebrated men for the valuable additions which they have unquestionably made to the previously imperfect knowledge of the human brain; and for the unbending spirit with which they have submitted to toil and indignity in the promulgation of their discoveries and opinions. The generous mind sickens with pain and humiliation on reflecting that, in a civilized land, and in a city boasting of her pre-eminent elevation in literature and philosophy, a zealous and enlightened stranger should have encountered, for a while, nothing but obloquy and ridicule. Respect, at least, is justly claimed by all those, however visionary their doctrines, who, inspired by a love of science, have unsparingly sacrificed to its promotion, their home,

* The occurrence of partial insanity,—of mental hallucination on one exclusive subject,—appears to be quite inexplicable on the supposition that the whole of the brain constitutes a single organ. And many striking facts in nature and in the phenomena of injury and disease, may be adduced to demonstrate the close connection which exists between the cerebellum and the passion of physical love. Phrenology, moreover, supplies foundations for a system of moral philosophy, more solid and intelligible than any which has hitherto been proposed.

their fortune and repose. And History, in retracing the progress of the human mind during the nineteenth century, will indignantly avenge the insults, with which an invidious contemporary has attempted to slur the distinguished names of Gall and Spurzheim; and do ample justice to the splendid talents and attainments, which he, in an evil hour, has affected to despise.*

In illustration of the important character and functions assumed, and executed by the brain and spinal marrow, it will be only requisite to state the following propositions. These admitted, the inferences, deducible from them, will be too obvious to require diffuse explanation.

The brain is the organ of the mind. It receives all the external impressions made upon the various senses. To it, the different sensations of pleasure and of pain are instantaneously transmitted; and from it, all the acts of volition directly emanate. It is destined to supply with an invisible, and hitherto unknown power all the subjacent organs of the system.†

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* They, who deem it requisite to acquire some little knowledge of the principles and pretensions of phrenology, ere they can consistently attempt to controvert or reject them, will do well to read Spurzheim's octavo work on the *Anatomy of the Brain;* his *Phrenology or Doctrine of the Mind;* and Mr. Combe's beautifully-written *System of Phrenology.*

† From the curious experiments of Dr. Wilson Philip, on the process of digestion in rabbits, and from the extraordinary effects of galvanism upon animal bodies recently deprived of life, it has been, by some, too precipitately inferred that the principles of life and galvanism are identical, or very closely allied, in

The brain never rests. By night as well as by day, it is incessantly occupied in supplying that invisible power, without which the functions of the dependent organs would immediately cease. The first to receive the impression of all the moral agents, and agitated by every gust of passion and feeling during the day, it is commonly excited, in sleep, by distressing or pleasurable dreams, while the heart and intestinal canal are sunk in comparative repose. It, moreover, exquisitely and directly suffers from every shock or injury inflicted on the subjacent organs.

The structure of the brain can never be destroyed, or even materially injured or disturbed, without inducing suspension or derangement, utter and permanent, or partial and temporary, of the functions of those organs which depend upon it for their supply of nervous energy.

If the eighth pair of nerves, forming a direct and principal* medium of communication between the brain and stomach be cut through, the secretion of gastric juice, and consequently the powers of diges-

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nature. The illustrious John Hunter is said to have entertained this opinion. No distinct avowal of it appears in his printed works. The singular electrical properties, exhibited by some species of fishes, as the *Torpedo vulgaris*, and *Gymnotus electricus*, have been adduced as favourable to the hypothesis. Of far greater practical importance is it to observe that galvanism constitutes a powerful agent in the recovery of persons from apparent death by drowning, strangulation, or irrespirable air. A portable galvanic apparatus, calculated for the purposes of resuscitation, may be procured in London.

* The stomach, in common with other portions of the intestinal canal, receives nerves also from the great sympathetic. The facts, developed by Dr. Philip, go far, however, to countenance an opinion that the stomach is immediately

tion, are at once suspended*. Yet the brain retains for awhile its pristine energy, and survives the ruin of the intestinal function; until it experiences, in common with the other organs, the consequences of the defective supply of blood; or until life is destroyed by the disturbance of the respiratory process, resulting from interruption of the nervous power which the lungs had previously received, by the eighth pair, from the cerebral mass.

The spinal marrow, of which some physiologists confidently assert that the brain itself forms merely an expansion or appendage, is the organ of voluntary motion.

If the spinal marrow be deeply injured or divided, all sensibility to external impressions, and the power of voluntary motion, are instantly lost in those members or parts which are supplied with nerves given off by the spinal chord below the seat of injury†.

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dependent, for its secretory power, on the par vagum. For a description of the former nerve, see Lobstein's beautiful work, *De Nervi Sympathetici humani, fabrica, usu et morbis.* Parisüs, 1823.

* This fact is distinctly proved by the experiments of Dr. Philip before alluded to. Repeated attempts have, indeed, been made to impugn their accuracy, and disprove the inferences drawn from them; but in vain. The correctness of Dr. Philips' statements has been most ably testified, and the weakness of his opponents' arguments demonstrated, by his enlightened friend, Dr. Hastings, of Worcester. See the *Quarterly Journal of Science and the Arts*, Vol. 9, 10, 11, and 12. First Series.

† A man, aged fifty, fell from a load of hay. Two of the vertebræ of the neck were fractured and driven in upon the spinal marrow. The sensibility, and power of motion, of the lower limbs, and all the inferior part of the trunk, were instantly extinguished. These parts might be pinched, or pricked, without suffering pain. The intestines and bladder were completely paralysed. Death took place on the ensuing day.

Thus palsy of the lower limbs, of the urinary bladder and the rectum, of the upper portion of the intestinal canal, and of the superior extremities, will result in proportion to the higher site of such injury or division of the spinal marrow. Physiological experiments, cautiously instituted, seem also to prove that, on division of this organ near the point of its union with the brain, the process of respiration is instantly suspended, and the life of the animal consequently destroyed.*

The brain and spinal marrow are protected from external injury by the hand of creative wisdom, with precautions to which no parallel is observed in the coverings or defences of the other organs. They are completely and strongly encased in bone. In determining the relative importance of the different organs, this fact affords incontrovertible proof of the superiority of the cerebral mass. A musket-ball has been known to perforate the lungs, the heart, or stomach, without destruction of life; and even without severe or, at least, incurable derangement of their functions. Comparatively slight injuries of the brain, and especially of the spinal marrow, are,

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* The experiments of the French physiologist, Le Gallois, clearly illustrate this fact. Hence the rapidity with which life is destroyed by expert performance of the operation of pithing, in the lower animals. Hence, too, the superior eligibility of the guillotine as an instrument of legal vengeance, when contrasted with the barbarous and uncertain process of strangulation. The atrocious murderer of the unfortunate Maria Marten was heard to groan after a suspension of at least eight minutes.

sooner or later, almost invariably productive of violent or fatal consequences.

Closely allied in function as in structure,—forming a continuation of the same mass,—and constituting, in fact, one organ or system of organs, the brain and spinal marrow intimately and exquisitely sympathize with each other in their morbid affections. Thus, in diseases of the brain, it is common to hear complaints of pain extending along the course of the spine and of the larger nerves; of tingling, numbness, and involuntary startings of the extremities; and to observe partial or general convulsions. While inflammation or congestion of the spinal chord, however induced, is frequently complicated with headach, ringing in the ears, giddiness, violent pulsation of the temporal or carotid arteries,* stupor or delirium, and all the other symptoms indicating the extension of the spinal irritation to the brain. Neither of these can be long or severely affected; but

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* The carotid arteries are the two principal channels by which the blood is transmitted from the heart to the brain. They may be felt beating in the neck, on each side of the windpipe. The strength of their pulsations affords an admirable index whereby to discover the existence and degree of any increased determination of blood to the brain. A wound of one of these important vessels is almost invariably and rapidly fatal. Of this knowledge the late Marquis of Londonderry availed himself for the dreadful purpose of self-destruction. And Mr. Abernethy has immortalized his name by the daring project of tying the carotid artery in a case of wound, and by the splendid improvements in the treatment of aneurism to which this memorable operation has since led. The temporal artery is a branch of the carotid; and receives its name from its distribution on the temple. Blood may be drawn from it, with signal advantage, in some morbid affections and injuries of the brain.

the other more or less promptly sympathizes with it. The sudden translation, or extension, of diseased action from one to the other is no uncommon event in practice.

Finally, as the substance and membranes of the brain may be the seat of congestion, inflammation, and their various morbid consequences, without increased sensibility, enlargement, or other alteration, of the bones of the skull; so different diseases of the spinal marrow may exist, and proceed to their fatal termination, unaccompanied by unnatural tenderness, projection, or other appreciable change, of the bony rings or vertebræ forming the cavity in which the organ is contained. This truth, highly important to a successful discrimination of spinal diseases, and apparently often neglected in practice, cannot be too deeply impressed on the observer's mind.

So common, indeed, is this source of error, that men of great professional talent and experience have been known confidently to deny the existence of disease in the spinal marrow; because, on examination, they could detect no morbid condition in the bones by which it is enclosed.* What, if the repe-

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* Mr. Abernethy, himself, exhibits a notable instance of this carelessness of observation. Error of judgment, on such a subject, is quite inconceivable in such a man. Detailing a case of paralysis of the lower limbs, "which was supposed to originate from a disease of the spine," this celebrated writer expressly notes the non-existence of "any disease of the vertebræ;" but makes not the slightest allusion to the state of the contained organ. Neglect of its examination may be consequently inferred. See *Surgical Observations*, Part I. page 96.

tition of a forcible illustration may be allowed, would be thought of the sagacity of that practitioner, who should avow his disbelief in the existence of an affection of the brain, because the bones of the skull exhibited none of the characters of morbid action?

The preceding positions will not, it is presumed, admit of controversy. In evidence of the correctness of the greater number, the most valuable works on modern physiology may be adduced. Attentive observation of the phenomena of accident and disease may be confidently appealed to, in proof of the rest. The following opinion, however, is merely hypothetical; and, as such, submitted to discussion, with no claim to the character of an established fact.

It may be doubted whether sympathy can take place between two distinct parts or organs of the system, unconnected by contiguity or direct nervous communication, except through the intervention of the cerebral mass. Such immediate sympathy between two remote and unconnected organs, is, at all events, difficult of comprehension. Severe mechanical injury is inflicted on the foot. The functions of the intestinal canal, and the general health, are consequently deranged. But, in this instance, is not the irritation, instead of being transmitted directly to the stomach, first propagated from the wounded member, by the medium of its nerves, to the cerebral mass; and subsequently reflected from it upon the organs of digestion, and the general system? Is not this a correct illustration of the mode in which

tetanus, resulting from external violence, operates in the production of its peculiar and frightful phenomena? Such, at least, is the inference suggested by the present imperfect knowledge of the functions of the brain and nerves. It acquires further confirmation from the facts incontrovertibly substantiated in the writings of some of the most enlightened pathologists of the age.

Inflammation of the brain and spinal marrow is commonly signalized by a train of external phenomena, and attended with consequences, so formidable and strongly-marked, that the experienced practitioner can find no difficulty in recognizing its presence, and deciding upon its nature. Yet there are some chronic affections of both organs which exist in a form so insidious, or assume characters so varying or equivocal, as to elude the scrutiny of the most vigilant physician; or frustrate every attempt at correct diagnosis; if his attention have not been previously and powerfully excited to this obscure tribe of cerebral diseases. In elucidation of the argument, it will be sufficient to adduce examples of one or two affections unquestionably arising from a cerebral source; and of which, although very prevalent, the precise origin is not generally suspected; and the treatment, in consequence, is commonly erroneous.

In females at an early age, and especially in those of feeble and delicate constitution, pain about the convexity of the sixth or seventh rib, frequently

forms a most obstinate and distressing symptom. It is usually, yet not invariably, seated in the left side. In general, it is dull, wearying, confined to a small spot, and distinctly circumscribed. But it is subject to paroxysms of such acuteness and severity, as to assume an aspect very strongly resembling that of *Neuralgia* or tic douloureux; and, without doubt, as closely allied to it in origin as in character. During the violence of these paroxysms, the pain sometimes strikes upwards in the direction of the breast-bone and shoulder; and a sense of numbness, of tingling, and loss of power, are felt in the corresponding arm. Long preservation of the erect posture, fatigue, grief, anxiety and all the depressing agents, and ingestion of food, particularly in a solid state, are constantly followed by aggravation of the pain. It suffers no very decided change on full inflation of the lungs with air; nor is cough or difficulty of breathing, although sometimes forming a dangerous complication, essentially connected with it. By the assumption of the recumbent posture, great relief is almost instantly obtained: and, so signal and invariable are the results of this simple expedient, that it appears to constitute the best, if not the only, diagnostic sign of the peculiar character of the affection.

Females, whose time is unduly devoted to fatiguing domestic occupations or sedentary pursuits, and who are consequently excluded from the invigorating influence of air and exercise, most frequently suffer from this "intercostal pain." Head-ache, de-

pression of spirits, debility and lassitude of the muscular system, weakness of the pulse, tremor or palpitation of the heart, wearying pains and coldness of the extremities,—constitute its ordinary,—and excessive torpor of the bowels, one of its most invariable—attendants.

It is occasionally complicated with loss of voice or *Aphonia;* and sometimes, although more rarely, with unnatural pulsation in the chest, and obstinate rejection, by vomiting, of every alimentary substance introduced into the stomach. Instances of its obvious alternation with intense pain in the head, accompanied by violent throbbing of the carotid arteries, and by all the phenomena of a high state of cerebral congestion, have sometimes been observed.

Commonly regarded as organic disease of the heart, or inflammation of the pleura, liver, or spleen, the treatment of this affection is, in most instances, as unsuccessful, as the views upon which it is founded, are erroneous. Blood-letting, general and local, blistering of the side, mercury, abstinence, and all the depleting remedies, afford sometimes a transient, but delusive, mitigation. More frequently, they aggravate the pain, and increase the debility by which it is constantly attended. If blindly persevered in, they may produce irrecoverable exhaustion of the system, or affections more perilous than that which they were intended to relieve. On the other hand, the pain will be tranquillized, and, in general, ultimately subdued by undeviating perseverance in a

plan of treatment, of which reclination on a couch for several hours daily, simple but generous diet, aloetic aperients, preparations of iron, and the other metallic and vegetable tonics, stimulation of the integuments of the spine, cold sponging or the shower bath, form the principal constituents.

If, in the earlier stages of this affection, the spinal column be attentively examined, little alteration from its healthy state will be perceptible. In general, however, a slight degree of tenderness will be evinced by the patient, on the application of pressure, in one or more points, from the middle of the dorsal portion, to the summit, of the spine. At a more advanced period, spinal pressure will be scarcely tolerable; and often productive of pain darting with the rapidity of a galvanic shock, into the chest or arm: and, according to the duration or severity of the complaint, one or more of the vertebræ will exhibit the well-known characters of disease; and the process of spinal deviation will have commenced. It is scarcely requisite to add that the progress of the morbid change will be greatly accelerated by the debilitating system of treatment too frequently founded on a mistaken impression of its seat and nature. Irretrievable distortion of the spine, with all its hopeless and distressing infirmities; habitual hysteria or chorea, nervous atrophy, or pulmonary consumption,* are generally the sad consequences of neglect

* In some instances, probably of rare occurrence, there exists an obvious con-

or error in the management of this most common and insidious affection.

The loss of voice, to which slight allusion has been made in a preceding paragraph, is a morbid phenomenon of frequent occurrence in delicate or weakly females. It is not directly induced, as the popular voice is wont precipitately to decide, by exposure to humidity or cold; nor consequent, as professional men, with equal confidence and incorrectness, too often pronounce, on derangement of the stomach. Obviously connected with spinal irritation and congestion, it may be regarded as dependent, for its immediate production, on a morbid state of the inferior laryngeal or recurrent nerves,* which are exclusively distributed to the organ of voice. Fatigue, or the agitating or depressing passions will suffice to excite it, in a system predisposed to its occurrence. Once set up, it may be sustained, or aggravated, by atmospheric or intestinal causes. When of recent origin, it will, in general, yield to the invigorating plan of treatment indicated for the preceding affection. A blister, applied to the back of the neck,

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nection between caries of the spinal bones and a tuberculated condition of the lungs. The subject has not yet apparently attracted the notice of writers upon medicine; nor is the relative priority of the two affections clearly determined. In the sequel, a case illustrative of this formidable complication, will be briefly detailed.

* The recurrent nerves are a branch of the eighth pair, or par vagum. As a decisive proof of their influence, it may be mentioned that loss of voice is described, by all physiologists, as an invariable consequence of division of the eighth pair of nerves, in their experiments on the lower animals.

will signally expedite the fortunate result. The voice may be sometimes restored by the employment of mercury; but this, the experienced physician will denounce as objectionable practice. For every agent, which, like mercury, reduces the powers of the system, must unquestionably render it more liable to a recurrence of the disease.

In those unfortunate cases, where the loss of voice has been constant, of long duration, and complicated with paralysis, chorea, or epilepsy, the affection may be considered as probably resulting from morbid alteration of the posterior part of the brain, or of the cervical portion of the spinal marrow; and consequently as insusceptible of remedy by the powers of medicine.*

The other disease, which may be most aptly selected as illustrative of insidious cerebral irritation, has, of late, acquired a great ascendancy in these islands. Keeping pace with the rapid progress of intellect and refinement, of commercial speculation and adventure, it almost rivals in frequency tuber-

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* A lady, aged thirty, two years ago, consulted the writer. She had suffered, long and uninterruptedly, from loss of voice. She could utter no audible sound. Medical treatment had been unavailing. The peculiar attitude of the head, and the physiognomical expression seemed to indicate the existence of spinal disease, probably involving the adjacent brain. The patient was excessively feeble, hysterical, and "nervous;" motion of the neck painful; pressure on the cervical spine, intolerable. The substance of the marrow, and bones enclosing it, were evidently diseased. No hope of a fortunate result was given. The occurrence of incurable chorea, convulsion, or paralysis, was confidently prognosticated. The last time, tidings of the patient were received, these predictions had been, in part, unfortunately verified.

cular consumption itself; and constitutes, in fact, one of the prevailing chronic diseases of the age. This affection consists in an obscure state of irritation of the brain, commonly implicating the superior portion of the spinal marrow. The causes, which predispose the system to its attacks, are probably connected with some original peculiarity in the moral or physical constitution of the individual. Those, which excite it into action, may be distributed into the internal and external. They operate either directly by inducing an increased afflux of blood to the brain, as inordinate mental exertion, anxiety, grief, and the infliction of mechanical violence; or indirectly by the stimulation of a remote organ, as intemperance; or by destroying the balance of the blood's circulation, as profuse hæmorrhage. In the majority of cases, however, the disease may be distinctly traced to a moral source. For its proximate cause, it apparently depends on augmented impulse, or irregular distribution, of blood to the whole, or part, of the cerebral mass. Whatever these causes be, when once induced, it will be kept up, and aggravated, by every moral or physical irritation or excess.

In its commencement and early progress, this affection is often so obscurely marked as to be with difficulty recognizable. The external phenomena, to which it gives rise, are, indeed, sometimes more clearly discernible in a remote organ, than in the brain itself: so that, until it has acquired, from du-

ration, a certain intensity, and until all the ordinary methods of treatment have been found unavailing, the precise seat and character of the disease are rarely suspected. Little known in the tent of savage, or in the peaceful dwelling of pastoral life, it visits the retirement of literature and science, the busy haunts of commerce and refinement. The sedentary in occupation, the ardent and susceptible in feeling, and the highly-gifted in intellect or attainment, are peculiarly, although not exclusively, exposed to its aggressions.

Two distinct varieties of this formidable affection may be clearly discerned in practice. Anxiety of countenance, an air of peculiar restlessness and despondency, obscure pain or heaviness, with increased heat, of the head, undue pulsation of the carotid arteries, and slight puffiness of the cheek,* constitute

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* There are a few external signs which, although very commonly present and distinctly marked, have not been generally observed, or recognized, as diagnostic of derangement of function, or disease of structure, in the brain. One of these is *a slight œdema, or pitting of the cheek on pressure.* It very often exists in simple congestion; and, in such cases, has repeatedly been pointed out by the writer to his professional friends. The mode of its production is not very obvious. It must not be confounded with the swelling of the face, very frequently observed in diseases of the heart. The general character of the attendant symptoms, and the absence of dropsical swelling of the extremities, will suffice to prevent the circumspect practitioner from confounding it with the latter more decided and ominous appearance. *Obscure pain with stiffness of the muscles of the neck,* constitutes another of these neglected signs. It usually accompanies those cases, where mental restlessness and excitement, dependent on cerebral irritation, occur at intervals; and the access of the paroxysm is then marked by recurrence or aggravation of it. Wrinkling of the integuments of the forehead, produced by contraction of the frontal muscle, is its general attendant. By hasty or unreflecting observers, it is often beheld, and treated, as a rheumatic affection. The last

the leading external signs of the complaint in its more simple and concentrated form. The tongue is usually clean; the secretions of the liver natural; the bowels torpid; the appetite unimpaired: the pulse at the wrist feeble, and somewhat accelerated. The mind is haunted, especially at night, by gloomy anticipations and terrific images. In some severe cases, there occur intervals of respite from suffering, the duration of which is as uncertain, as their cause inexplicable; and the recurrence of the paroxysm is generally preceded by involuntary starting of the muscles of the spine; pain, and stiffness, of those of the neck; and attended with extreme restlessness, and flushing heat of the head and face. Its ordinary termination, when mistaken or unsuccessfully treated, is organic disease of the brain, and insanity, paralysis, or fatal apoplexy.

In the other yet more obscure and embarrassing shape, which the complaint frequently assumes, one or more of the remote organs conspicuously exhibit the signs of its existence. It varies in aspect according to the organ thus consecutively affected at the period of observation: and the diagnosis and

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diagnostic sign, to which it will here be necessary to call the reader's attention, is an *unnatural and most striking projection of the eye-ball.* The progress of this change is, in most instances, slow and uninterrupted. In others, its accession has been more sudden. Its extent is sometimes such that the organ seems as though it were partly protruded from the socket. The practical inferences, which may be drawn from a decided existence of this sign, are as unerring as unfavourable. It will be invariably found to indicate that a fatal process of morbid alteration is going on within the skull.

treatment of the disease are too often erroneously fixed by an exclusive view to this imagined source. By writers apparently unacquainted with its actual origin, it has been aptly described as in form a real Proteus; in character, a genuine Mimosis.* The lungs, the heart, or uterus, frequently suffer in this insidious affection: and the leading symptoms will be obviously determined by the nature and function of the organ thus implicated. Hence, dry irritating cough and disordered breathing; palpitation of the heart and faintness; and violent hysteria, constitute the respective signs of the three different secondary irritations just specified. They may exist separately or together;—alternate with hiccup and diverse convulsive affections of the muscular system;—and sometimes succeed each other with such rapidity and violence as to astonish and perplex the practitioner who has not acquired a correct knowledge of their source and treatment. But on different portions of the intestinal canal, particularly the stomach and the colon, this cerebral irritation most frequently exerts its baneful influence: and, here, as in all

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* Dr. Marshall Hall, of London, has employed this term, of Greek derivation, to designate a genus of diseases, signalized by their extraordinary versatility of character, and their aptitude to assume the aspect of various morbid affections. Some diversity of opinion may, and does, exist, as to the real origin and seat of these "mimic" complaints, and the philosophical correctness of the principle upon which such a genus of diseases has been constituted. But every one must appreciate, and acknowledge, the admirable talent and minuteness and fidelity, which distinguish Dr. Hall's masterly delineation of the variable phenomena exhibited by them.

other cases of complicated derangement, the consecutive re-acts upon, and aggravates, the primary complaint. The disease, thus established, may continue very long without inducing change of structure in the organ sympathetically disordered, or in its original seat, the brain itself. After having embittered, for months, or even years, the existence of the unfortunate patient, and too often rendered him an object of unmerited ridicule or reproach to the thoughtless or unfeeling,* the disease is removed either by some auspicious change in his external circumstances, or by an interior revolution, spontaneously or artificially accomplished. Most commonly, however, neglected or mistaken, it pursues a fatal progress. The disordered function of the organ consecutively affected, terminates, at length, in incurable alteration of structure ;† or, the signs of this

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* Nothing can be more cruel and impolitic than such treatment. It aggravates the already dreadful sufferings of the patient: and frequently drives to acts of desperation, the being whom sympathy and kindness might have soothed and rescued. An individual may feign illness for the attainment of some particular object; or, suffering from one morbid affection, believe himself menaced by another yet more formidable. But imaginary disease, in the common acceptation of the term, involves an obvious absurdity. The shadow does not exist without the substance: and wherever, day after day, the unaffected language of complaint is heard, there will some physical irritation or disorder, however latent or insidious, be ultimately detected.

† This fact is clearly illustrated by the case of the celebrated exile of St. Helena. He died from an organic disease of the stomach, induced, not as Dr. Kinglake whimsically argues, by the immoderate use of snuff, but by the incessant agitations of a singularly powerful and restless brain. This extraordinary man had never committed dietetic excesses. It will generally be found that persons, destroyed by cancerous affections or tumours of the stomach, have possessed strong passions, or suffered great mental conflict or solicitude.

derangement suddenly disappearing, the morbid action becomes concentrated within the brain itself, and exhibits all the external characters of the variety, first described, in an aggravated form. Softening of its substance and extravasation of blood; or inflammation with effusion, or thickening or ossification of the membranes of the organ ensues: and death terminates the conflict; or a state of madness or imbecility, far more terrible than the grave, obscures, or for ever paralyses, the intellect of the wretched sufferer.*

The disease, thus faintly delineated, has, heretofore, received various designations. With every change of theory or of practice which love of novelty has introduced, or fashion raised to ephemeral celebrity in the medical world, it has suffered a corresponding variation of name and treatment. In consequence, however, of a revolution achieved by some distinguished men in the British schools, the title of *Disorder of the Digestive Organs*, has, of late, been almost universally and indiscriminately

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† Examples of these several varieties of termination have been repeatedly met with in practice, by the writer. Cases, illustrative of them, will be elsewhere recorded. With respect to one of these varieties, it may be here observed, that in three cases, which, within a short time, fell under his notice, obstinate and apparently incurable derangement of the stomach was succeeded by a sudden attack of violent insanity. Immediately on the accession of the maniacal state, all the pre-existing symptoms of the intestinal affection vanished. The subject of one of the cases died with symptoms of cerebral inflammation; the second, it is believed, still continues insane; the third was restored to her family after a few weeks' residence in a lunatic asylum; and has since suffered no return of either the cerebral or the gastric affection.

applied to this affection, in common with some others; which, differing in source, although somewhat analogous in external character, are correctly entitled to that appellation.*

To trace the origin and progress of this singular revolution;—to expose the errors resulting from extravagant application of the doctrines of the *Intestinal School*, and the injury which it has inflicted on the cause of science;—to indicate the signs which portend, if not actually to accelerate, its approaching fall,—will constitute the ungrateful object of the next chapter.

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* Numerous are the instances in which the symptoms of the cerebral affection, here described, evidently originate from an intestinal source. In these cases, the colon, and especially that portion of the bowel, called its head, will generally be detected as the principal seat of irritation. To such cases, Dr. Hall's description of the Mimoses will, perhaps, more correctly apply. Yet, even then, the cerebral may survive the removal of the intestinal affection, and consequently require treatment, as though it had been, itself, the original disease. The practical value of these views, and the circumspection which they are calculated to inspire, must not be overlooked. Whenever, in disorders of intestinal character, and supposed intestinal origin, the tongue has become clean; the excretions regular in quantity and appearance; and there exists no morbid tenderness on pressure upon the pit of the stomach, on the hollow of the right flank, or other part of the track of the colon; and yet complaint is still heard, and the system does not regain its lost energy, latent irritation of the brain or heart may be fairly suspected. A continued reference of effects to a cause, long after all external signs of such cause have disappeared, is equally inconsistent with sound logic and experience. In a case, narrated by Dr. Paris in his work on *Diet*, a disease regarded by a "popular practitioner," and apparently at first by himself, as intestinal, has, from the evidence of dissection, been satisfactorily traced by an acute writer, to enlargement of the heart. See Dr. Johnson's *Quarterly Journal*, vol. ix. page 50.

CHAPTER III.

ON THE ORIGIN, THE ERRORS, AND DECLINE, OF THE "CHYLOPOIETIC" OR INTESTINAL SCHOOL OF MEDICINE, IN BRITAIN.

THIRTY years have now elapsed since Mr. Abernethy first promulgated his opinions on disorders of the stomach and bowels, and on the universal influence which they are supposed to possess, in inducing derangement of every other organ, contiguous or remotely-situated. Previously to this period, the study of intestinal affections had been inexplicably neglected. Blindly attaching themselves to one or other of the rival systems of the Edinburgh school, and descrying the operation of spasm or of debility, alone, in all the various disturbances of the animal economy, the practitioners of medicine regarded the deviations of the important digestive process without interest, and treated them without success. Mr. Abernethy, therefore, in directing professional attention to this fruitful source of diseases, unquestionably conferred a signal benefit upon humanity

and science. Yet, that they have not derived from the application of his splendid and original mind, all the light and the impulse which it was so admirably fitted to impart;—that Mr. Abernethy should have sacrificed to a thirst for ephemeral popularity, his lasting reputation as a philospher,—is deeply to be deplored. Systems, like men, can have no enemy so formidable as an extravagant eulogist. Nothing can be more destructive to the character of a theory, than indiscriminate application of its principles. But the union of prudence and circumspection with the aspirations of genius, is unfortunately rare. That peculiar constitution of mind, which prompts to the direct attainment of striking and splendid results, is commonly ill-calculated to trace with success the circuitous path of patient observation, and stoop to the drudgery of rigorous induction from established facts.

Scarcely had the public mind been stricken with the novel and imposing views of the celebrated Professor of St. Bartholomew's, when the valuable treatise of Dr. Hamilton, on purgative medicines, appeared. About the same period, Dr. Currie began to disseminate, in the Borough-School of London, his opinions on diseases of the liver, their influence and ubiquity. Several writers, of inferior talent and celebrity, smitten with the potent infection of the age, seized upon different portions or appendages of the intestinal canal, to illustrate, and assist in, the propagation of the specious doctrine.

Diseases of the colon,* and strictured rectum,† indurations of the pancreas,‡ and chronic peritonitis,§ were described as affections of the most common occurrence; and derangement of the stomach and

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* An obstructed or deranged state of the colon, a common source of the secondary cerebral affections before alluded to, has sometimes so closely simulated organic disease of the heart, as to deceive the most experienced observer. The head of this intestine is a frequent seat of morbid phenomena, as generally as erroneously attributed to derangement of the stomach, liver, kidney, or uterus. In all diseases of the colon, injections constitute a valuable remedy. Largely administered, they operate in the double capacity of an evacuant and tranquillizing agent.

† Stricture of the rectum is a more common disease than has hitherto been supposed. The sufferings of many persons, in whom its existence is not suspected, might by accurate inquiry, be traced to this cause. "Disordered stomach" and "internal piles" are very convenient terms wherewith to lull the apprehensions of a querulous patient, and obviate the unpleasant necessity of minute investigation of the seat and character of his complaint. In every case, however, of obstinate or long-continued costiveness, especially where pain or difficulty is experienced in voiding the feces, the introduction of a bougie to ascertain the state of the intestine, should, on no account, be neglected. Carefully practised, it can do no harm. The patient may be saved from years of misery, and death, by the knowledge which it will sometimes supply. The base and dishonourable purposes to which the stricture-doctrine is too frequently perverted by scientific men, demand, however, the most indignant exposure and reprehension. See Mr. Frederick Salmon's *Practical Essay upon Stricture of the Rectum.* An interesting and valuable work.

‡ The Pancreas evidently performs an important part in the process of preparing chyle from the digested aliment. The fluid, which it secretes, is poured into the commencement of the small intestine, from the same orifice with the bile. Morbid alterations of this organ are not uncommon: but none of the external signs, which denote their existence during life, have yet been clearly established.

§ This morbid state is characterized by tension of the belly and soreness on pressure. It constitutes an insidious affection, and is frequently neglected. In the majority of cases, it results from an inflamed or loaded condition of the large intestine. Local abstraction of blood, and blistering, will arrest its progress. By purgatives and abstinence alone, can its cause be removed, and its recurrence obviated.—See Dr. Pemberton's elegant work on *Diseases of the Abdominal Viscera.* London, 1807.

liver conveniently adduced to elucidate every ambiguous or obscure phenomenon, which Man, in deviation from health, may be seen to exhibit.

Stimulated by a thirst for innovation, as insatiable as inherent, the human mind seizes with avidity upon new opinions. And this natural appetite will be still farther excited, if such opinions, invested with the characters of science, and sustained by the authority of a great name,—suggest a simple and readily-accessible remedy for the wants and sufferings which humanity is destined to endure. Hence, novel doctrines in medicine are imbibed with especial rapidity for a while; and acquire converts proportioned in number to the reputation of the author, and the boldness and eloquence with which his theories are advanced. It is, therefore, less to be wondered at than lamented, that, taught by such distinguished men, notions of the universal prevalence and power of intestinal and liver affections should have been implicitly received by more inert or inferior minds; and achieved such celebrity as to constitute an era in the History of Medicine.

The creed of Dr. Currie did not long survive its lamented author. By the future historian of the science, it will, probably, be recorded, as illustrating the baneful influence of a blind attachment to exclusive theories upon a powerful and highly-gifted mind. Symptoms, emanating from disease of the heart or spinal pillar, are no longer ascribed, without scrutiny or hesitation, to derangement of the

liver; nor the evils and sufferings, which they inflict, aggravated by the exhausting consequences and the torture of mercurial salivation.* Or, if an instance of such negligence or infatuation do sometimes obtrude itself on the eye of the enlightened physician, he is fain to regard it as a rare exception to the practice which more correct views of pathology have introduced;—the last vestige of a delusion, once prevalent, but now expiring,—never to re-appear, in these lands.

In the medical literature of his country, the work of Dr. Hamilton is destined to retain a distinguished rank. Yet the principles, which it inculcates, valuable as they are in the hands of the discriminating practitioner, can never again be extravagantly acted upon, and abused, as they have until lately been. This, the philosophic character and attainments of the present age, and the light which morbid

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* A few years ago, the employment of mercury, in all obscure cases of disease, had become so fashionable in some districts, as to render these spectacles by no means uncommon. Nor is the practice even now quite extinct. Not long since, the writer was consulted by two females; one of whom had been four, and the other five times salivated for supposed disease of the liver. Injury rather than benefit had been the invariable result of these exhausting processes. In both instances, examination of the spine, by discovering the real source of the morbid phenomena, would have saved the patient much unnecessary torture and confinement. The state of the spine should, in all cases of obscure internal disease, be rigorously investigated, especially where the patient feels pain, numbness, tingling, or defect of warmth and power, in the back or limbs, which can be satisfactorily traced to no other cause. The brain of an individual, who has been repeatedly salivated, exhibits, according to Dr. Spurzheim's testimony, a peculiar flaccidity, or flabbiness, distinctly appreciable by the touch.

anatomy is daily throwing upon the source and nature of different diseases, alike conspire to forbid. The dreams of theory will no longer prevail, when the darkness, which can alone engender them, has passed away. That the practice of the Edinburgh physician suggests views which ought never to be lost sight of,—and will furnish a powerful auxiliary,—in the treatment of disease, truth imperiously requires the admission. But that it will often prove unavailing in solitary, or injurious in indiscriminate employment; and hence ultimately give place to more direct or efficient remedies, experience can be adduced to prove. Hysteria and Chorea may, indeed, be cured by a course of purgatives long and rigorously administered. But who can conscientiously prescribe,—who resolutely swallow,—week after week, the night and morning dose of calomel, jalap, and cream of tartar; if he be aware that, by abstraction of blood from the head, and blistering of the spine, an occasional aperient, ammonia, preparations of iron, and the shower-bath, the disease may, in general, be far more promptly and permanently subdued? And, verily, the mucous membrane of the bowels must be much less delicate and sensitive than the physiologist would be led, from its structure, to infer; if it sustain with impunity the continued stimulation and rude discipline to which, by the followers of Dr. Hamilton, it is commonly subjected.

To the opinions and practice of Mr. Abernethy, however, it is especially important to direct the at-

tention of the professors of medicine and the public. Such are the genius and reputation of this extraordinary man;—such the eloquence and enthusiasm with which he has promulgated his intestinal doctrines;—so specious is the theory which he has constructed,—so easy of adoption the practice which he inculcates;—that, upon foundations, far better calculated for the more transient erection of a fortune and a name, a school has, at length, arisen. The success of these doctrines has been as unprecedented as their simplicity;—their errors as signal as the fate which they are, ere long, destined to experience. To deny that vigilant attention to the state of the intestinal canal really involves an admirable principle in regulating the disorders of the general health, and of the various organs with which that canal so intimately sympathizes, would argue blindness as desperate as that which distinguishes the more bigotted adherent of the intestinal school. Yet that, from inordinate attachment to these fashionable and seductive doctrines, have arisen carelessness in the observation, and impotence in the treatment, of diseases, no candid or experienced observer can hesitate to admit. If all the various derangements of the human fabric result from irritation or disturbance of one organ or system of organs;—if all the morbid phenomena, which signalize these derangements, be referrible to one source, and curable by one plan of treatment slightly modified,—how greatly may the study of medicine be curtailed, and its practice sim-

plified. The time, labour, and fortune, heretofore expended upon medical education, have obviously been expended in vain. The importance of minute investigation into the history, and seat, and character of diseases, and the external signs by which they may be respectively distinguished during life, vanishes, like a morning-dream, before the light of the new doctrines. The illiterate empiric and the village crone may again, as in days of old, enter into successful competition with the enlightened man of art. Obscurity in the nature, and hesitation in the name and treatment, of an individual affection, can no longer exist. The intestinal discharges and the tongue of the patient alone require inspection. To mercury and sarsaparilla, senna and the neutral salts, the catalogue of medicinal remedies may be safely, and most conveniently, restricted. And those stubborn diseases, which now and then inexplicably defy the united operation of blue pill, rhubarb, and the vegetable decoctions, may be confidently denounced as incorrigible; and their unhappy victim be abandoned, without further struggle, to his fate.

But nature, in all her beautiful simplicity, acts not so uniformly as it may suit the generalizing spirit, and the sweeping inferences, of the theorist to describe. She is not so thinly clad that the vulgar eye can detect at once the scene, and penetrate the mystery, of her secret operations. Man, too, in the progress of civilization, and the lapse of ages, has deviated widely from the simple path which nature

originally prompted him to pursue. His diseases have consequently, at length, assumed somewhat of the artificial character of his habits; and the frequent alterations from the healthy condition, which his various organs display, are involved in additional obscurity. This truth, a transient contrast of savage with civilized life will render sufficiently evident. Not only is the former exempt from many of the morbid affections which infest the latter; but the diseases, common to both, almost invariably exhibit an aspect more complicated and severe in a state of refinement, than in that of simple and unsophisticated nature.

In common, too, with the superior animals, man possesses other organs besides stomach, and bowels, and liver:—all as important,—all as susceptible of disease, as the abdominal viscera; and some, at least, more imminently and unceasingly exposed to its influence and aggressions. The brain and spinal marrow, the heart and lungs, in an exclusive attention to the chylopoietic apparatus, the disciple of the Intestinal School, seems well-nigh to have overlooked. That each of these may, like the stomach, become the seat of original disease, and propagate its morbid affections directly or indirectly to the other organs, is a truth as incontestibly proved by observation, as the fact of their existence.

If, again, it be conceded, as truth demands, that, in these luxurious times so peculiarly favourable to their development, morbid conditions of the stomach

do very generally prevail,—the inference, by no means, follows that all such affections originate in the organ itself. On the contrary, it must be obvious to the unprejudiced eye, that many of these derangements, heretofore considered as primary, are, in fact, merely symptomatic,—consequent on irritation propagated from a distant organ to the stomach; and hence susceptible of permanent removal only by means directed to the source from which they have emanated. If, for instance, the brain, from intense thought, anxiety, or the infliction of external violence, exhibit that state of congestion, which such causes notoriously induce, the digestive organs will immediately sympathize with it, and torpor or derangement of their functions necessarily result. Irritation from a diseased kidney or uterus,* will exert such influence on the stomach as to excite all the phenomena and consequences of the most distressing sickness or indigestion. The physician who, under these circumstances, should direct his views and treatment exclusively to the consequent affection, would acquire as little reputation for sagacity, as claim to confidence or success. And he would, at length, be taught by painful experience to acknowledge that

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* A man, who had long suffered from indigestion, died in 1820, after several days of the most obstinate and incessant vomiting. One of the kidneys exhibited the traces of violent inflammation: the other, wasted away, formed merely the containing sac of a large irregularly shaped concretion. The stomach and other organs were quite healthy. The influence of uterine irritation on the stomach, every woman, who has borne children, can sufficiently attest.

regulation of the intestinal functions, although constituting an essential, is not the only, point which requires attention in treating the diseases of civilized and intellectual man.

Yet such, unhappily, are the narrow views,—such the impotent and indiscriminate practice,—to which the doctrines of the Intestinal School, as at present inculcated, almost inevitably lead. So worthless, and even mischievous, are the results drawn by indolence and bigotry from the fairest improvement which, within the last century, has been conferred upon medicine. The sacrifice of human life and welfare to the extravagance of theory is ever most deeply to be lamented. In a country and in times signalized, like these, by an unwonted activity of intellect, and splendour of attainment, the pain is farther aggravated by the humiliation of the spectacle. How frequently are morbid affections of the brain or spinal marrow, of the lungs or kidney,* which common discrimination and energy might have sufficed to arrest or extinguish in their germ, allowed to run their destructive progress, accelerated, rather than opposed, by the

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* Several cases, of this nature, have been observed by the writer in his practice. To particularize them, might be deemed invidious; nor is it necessary. Instances are by no means uncommon, in which chronic inflammation of the membrane of the lungs has been suffered to run on, under the title and treatment of "stomach complaint," to fatal ulceration: when, by the timely and rigorous employment of blood-letting, blistering, low diet and regulated temperature, the sad consequences might probably have been averted. A sympathetic affection of the stomach, resulting from the irritation of enlarged and diseased kidneys, has sometimes been mistaken, by eminent men, for original "dyspepsia."

empirical prescription of some devout believer in the mystic powers of blue pill and sarsaparilla. Men, too inert to observe or to think for themselves, find the shadow of a great name a convenient cloak for their own apathy and indolence. They adopt, with all the inflexible prejudice, but untempered by his admirable sagacity, the peculiar opinions of their zealous and highly-gifted leader, and push them to an extent which his mind, in all its fortunate temerity, had never dared to contemplate. And disorder of the stomach and bowels resounds on every side, till the atmosphere of science is loaded with its feculency; and the streams of public instruction polluted at their source. And the medical philosopher refuses, in disgust, that homage to the name of Mr. Abernethy which it justly claims; and is tempted to withhold from his doctrines the sober confidence and approbation to which they are unquestionably entitled.

At the close of this transient and imperfect sketch, it should be distinctly understood that no one can more correctly appreciate the character and talents of Mr. Abernethy, than he by whose hand it has been fearlessly, and perhaps too severely, traced. In exploring the labyrinths of science, feelings of personal esteem, however profound, must yield to the influence of a principle more powerful and elevated. And it is but an act of justice to declare that the injurious consequences, resulting from Mr. Abernethy's doctrines, are far less attributable to himself, than to the mistaken zeal of his intemperate

eulogists and servile imitators. The utter rejection, indeed, of these doctrines, would be more pernicious and unphilosophical than even their unqualified adoption. They possess a value sufficient to rescue them from the fate of many a more elaborate theory by which they have been preceded. Their influence in practice, when judiciously applied, is so beneficial that it becomes a duty to denounce the errors of those who daily bring them into discredit and contempt by indiscriminate application. To enhance this value and influence, by rigorous restriction of the principles in question to the peculiar cases and circumstances of disease which call for their employment;—to fix on a more durable basis, by extricating these doctrines from the extravagance and abuse which must, ere long, have destroyed their utility, or even obliterated every vestige of their existence,—will, it is confidently hoped, be the ultimate consequence of the present inquiry into their merits.

That as the foundation of a distinct school of medicine, the theory of Mr. Abernethy cannot long retain its stability and its eminence, they who have attentively surveyed the inquiring spirit, and traced the intellectual progress, of the present age, will readily discern. In the conversations and writings of many of the most enlightened practitioners of the land, the signs of its decline and fall have, for years, been perceptible. Eloquent and highly-gifted men have, indeed, arisen to vindicate its character, and perpetuate its reign. They have protracted its ex-

istence; but cannot long avert its impending doom. Of these men, and of a host of inferior writers, who, by advocating the doctrines of the Intestinal School, have unwittingly accelerated the natural process of its decay, there may again be occasion to speak, as the subjects which they have treated, or the organs, whose diseases they have professed to elucidate, shall hereafter pass successively under review.

CHAPTER IV.

OF THE INFLUENCE OF MORAL AGENTS,—OF THE PASSIONS AND INORDINATE EXERTION OF THE MIND,—CONSIDERED AS THE EXCITING CAUSES OF DISEASE.

IT now remains to trace, in the order of their previous arrangement, the operation of the various exciting causes of disease upon the human economy.

Consistently with this plan, it will be first requisite to review, and to illustrate, more minutely than heretofore, the pre-eminent rank which the brain and spinal marrow occupy in the animal system; and to expose the unceasing influence which they exert upon all the subjacent organs, and especially on the intestinal canal, in production of the consecutive derangements, or in aggravation and sustenance of the primary diseases, from which these organs are prone to suffer.

The cerebral mass constitutes the organs of mind, and of voluntary motion. This position, no one, conversant with the principles of physiology, will be disposed to controvert. That it is destined to supply all the other members with an energy, deprived of

which they can no longer execute their respective functions; and that by it, all moral impressions are received and operate on the system; experiment, and the phenomena of accident and disease, conspire to establish as truths equally irrefragable. In illustration of the first of these instances, the effect of division of the spinal marrow, or of an important nerve, may be confidently re-cited. The latter will be strikingly exemplified by the instantaneous sickness, or suspension of the cravings of hunger, which a spectacle of horror, or abrupt communication of distressing intelligence is familiarly known to induce. The painful impression must, it is evident, in such instances, be first conveyed, by the eye or the ear, directly to the brain; and from it, be reflected with the rapidity of the electric flash, upon the organs of digestion. Death, from the rupture of the heart or of a large blood-vessel, has frequently taken place in the first paroxysm of extravagant grief or joy. From a sudden shock inflicted on the mind, the functions of the liver, and consequently the secretion of bile, have sometimes been, for awhile, suspended. And history may be cited to prove that a few hours, passed under the influence of the depressing passions, have sufficed to remove the colouring matter of the hair.*

* The hair of the unfortunate Marie-Antoinette, Queen of France, is said to have become perfectly grey during the night which preceded the day of her execution.

Of an organ, or system of organs, so conspicuously elevated in character and function, the morbid conditions, however induced, must unquestionably give rise to corresponding disorder in those members which derive their energy from it; and especially in the stomach, which is connected with the cerebral mass, by such direct and striking communications. And it is equally obvious that the consequences of violence sustained by any of the subjacent organs, or of irritation originally excited within them, are immediately transmitted to the brain, as to a common centre; and the irritation radiated from it, upon the original seat of accident or disease, and on the general system.

Thus, in all the severer injuries or disorders of the cerebral mass, the whole system and especially the intestinal canal, become sooner or later agitated and deranged. So also, in wound or disturbance of the stomach or bowels, as in violence inflicted upon the limbs, the brain instantly takes the alarm; re-acts upon the suffering organ with an energy and effect more conspicuous in proportion to the importance of the function executed by such organ, the severity of the injury, and the moral and physical susceptibilities and condition of the patient. And this influence of cerebral re-action frequently imparts to an accident, in itself trivial, or apparently destitute of danger, a formidable character; and decides sooner or later its fatal termination. The occurrence of Tetanus or locked-jaw from slight wound of the

hand or foot may be indicated as illustrative of this pathological fact.

It is, moreover, a truth which cannot be too deeply impressed upon the recollection of all those who are interested in the observation and treatment of diseases, that the brain, exhibits a susceptibility to the influence of morbid agents as signal as unfortunate; that it is not less pre-eminent in suffering than in function. For not only does it exquisitely sympathize with all the other organs, and thus participate in their inquietudes and diseases; but it is exposed to sources of irritation from which they are altogether, or at least immediately, exempt. All the moral and external impressions operate directly upon it. The load of the various anxieties, the shock of every conflicting passion, it is destined, in the first instance, to sustain. These impressions, strengthened by the refining influence of education, and multiplied by the artificial wants and restless aspirations of civilized life, occur in such power and number as to keep up a perpetual state of excitement and irritation utterly inconsistent with the healthy condition of the cerebral mass,* and the perfect regularity of its functions. And, at night, when the heart pulsates,

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* It is asserted by Dr. Spurzheim, that, from the appearance of the human brain after death, he can, in general, with great certainty, determine, whether its former possessor has been long or severely exposed to the influence of the moral causes of disease. In the individual, who has lived a happy and tranquil life, and died in undisturbed possession of his intellectual powers, the brain will be found to exhibit the healthy colour and consistence which distinguish the cerebral mass of the slaughtered sheep.

with an almost imperceptible languor, against the side; when the lungs perform, with inaudible effort and diminished frequency, the process of respiration; and the stomach, having passed forward its evening-meal, lies in a state of comparative inactivity and repose; the brain, incessantly occupied in the work of nervous supply, is still exposed to agitation by every transient gust of passion and of feeling,—still powerfully acted upon and excited by the mysterious imagery of dreams.

That the state of habitual excitement, to which allusion has just been made, should be engendered and kept up in an organ thus susceptible of morbid action, and constantly exposed on every side, to the influence of its exciting causes, is a circumstance as little calculated to inspire astonishment, as to admit of doubt. The comparative,—the almost perfect,—immunity of man, in a savage or pastoral condition, from the chronic diseases attendant on the more advanced periods of commerce and refinement, at once testifies the fact, and demonstrates the correctness of the principles brought forward in its illustration. How mental conflict and anxiety operate in inducing congestion, and consequently deranging the functions, of the brain, the contemplation of a well-known law in animal physiology will best explain: where irritation exists, or the powers of an organ are inordinately exerted or applied, there will the force of the blood-vessels be increased; their action accelerated; and their contained fluid be propelled,

in proportionate excess, to the parts which they are destined to supply. If the eye be irritated by the introduction of a small insect or a particle of dust, redness, and all the phenomena indicating extraordinary activity and fullness of its blood-vessels, will speedily be developed. The person who rises from the solution of a difficult problem in mathematics, or from the close of an anxious and well-contested game at chess, with intense head-ach and violent throbbing of the temporal and carotid arteries, may discern, in these signs of augmented impulse of blood to the brain, a striking elucidation of the same physiological truth.

The brain thus, like every other organ, acquires a propensity to, and sooner or late assumes the condition and characters of, diseased action, whenever the exercise of its functions has been pushed to an inordinate extent. As the stomach is injured by gluttony; the eye by long-continued exposure to strong light or examination of minute objects; so does the brain ultimately suffer from protracted excitement, or intense application of its faculties.

Again, the more perfectly an organ is developed, the greater will be found its susceptibility of improvement by the influence of education and discipline: and, generally, in proportion to its vigour of original constitution and acquired powers, will the morbid affections of such organ, when once excited, become obstinate and severe. This reasoning is peculiarly applicable to the brain. Upon the prin-

ciple, which it obviously suggests, may be explained the striking diversity that is exhibited by the man of intellect and the dolt, in the frequency and character of their respective diseases; and the facility with which the more simple disorders of the uneducated peasant are found to yield, when contrasted with the morbid affections, in general as severe as complicated, of the statesman and the scholar.

It has long been a favorite theme of argument and declamation with the moralist and philosopher, that the immoderate indulgence of sensual appetites and passions is invariably productive of punishment and remorse. Yet no popular writer has hitherto arisen to point out the inference, which the preceding views evidently sanction, that disease and suffering are also the tax that man is doomed to pay for extraordinary elevation of intellect or acquirement. Let them who seek to controvert this appalling truth, pause for awhile and survey the difference which exists between the man of talent, and feeling, and education, whose soul is exquisitely alive to every passing event,—to every impression of beauty and grandeur, —of deformity and imperfection, in the natural and moral world,—and the coarse and stupid being whose powers of locomotion alone distinguish him from the plant on which he gluts his craving appetite;—whose faculty of speech, from the inferior animal, which, in the fewness of his wants as in the simplicity of his attainments and diseases, he so closely resembles. Little elevated in the scale of intellect

above the Cretin of the Alps, or the unsheltered savage of the southern ocean, the latter exhibits a physical condition happily distinguished by its hardihood and insensibility. He cannot feel those fearful paroxysms of mental agony and depression; he is insusceptible of that poignant and unutterable suffering,—which impart to the diseases of the sensitive and refined an additional bitterness and gloom; and, while aggravating the miseries of sickness, retard or utterly defeat the operations of medicine; and for which no splendour of acquirement or reputation, nor all the baubles of opulence, can afford to the wounded spirit a remedy or compensation. The stomach of the boor may, indeed, be deranged by an occasional debauch. Extraordinary exposure to inclemencies of weather may induce in his hardy frame, an attack of rheumatism or inflammation. An emetic or a blood-letting will, however, usually suffice to restore his wonted health. To him are well-nigh unknown those more severe and embarrassing forms of nervous and intestinal disease which infest the higher orders of society. And, were he able to comprehend sufferings which he has never felt, and thus to correctly appreciate his own superiority in physical enjoyment, he would, perhaps, regard the restless votary of fashion,—the busy aspirant to celebrity or wealth, with an eye rather of commiseration than of envy.

There is yet another peculiarity in the relative exercise of the different organs; which, although illustrated by phenomena of common occurrence, has

hitherto been suffered to pass without notice at all adequate to its practical importance; and admits of explanation upon strictly physiological principles. It appears to be a law of nature,—an invariable rule in the animal economy,—that no organ can be cultivated beyond a certain point, or long and powerfully exercised, except at the proportionate expence of its fellow members: that, in fact, if more than the due portion of nervous energy destined for its supply, be expended upon one, the other organs must experience a deficiency which will sooner or later be announced by the corresponding torpor or derangement of their respective functions.

The Poet, the Painter, the Sculptor, the Musician, the man of Letters or of Science, who seeks to immortalize his name by the achievements or discoveries of his genius;—the Statesman, who decides by the operations of his brain, the destiny of empires, —lives in a state of incessant conflict and excitation, and consequent expenditure of the vital powers. He exhausts on the mysterious process of thought all the energies naturally destined for equable distribution among the various organs of the system. To him, the hour of darkness, which so beneficently sheds its oblivious influence on the inferior or less active members of the animal creation,—brings little or imperfect respite. For that is commonly the season when his mind, no longer unsettled by the claims and distractions of the external world, is wont most powerfully to concentrate itself on the objects of its study

or aspirations. Or, if spent by the fatigues of the past day, he be driven to seek repose, the tumult of the spirits will not often have sufficiently subsided to allow of its approaches: or it will be broken and rendered unrefreshing by the succession of fantastic images which perpetually flit across his agitated brain.

Under these inauspicious circumstances, the intestinal canal, deprived of its wonted supply of nervous power,—of that invisible agent whose operation is as conspicuous as its nature unknown,—grows languid and irregular in the performance of its important functions. The muscular apparatus, if the excess be carried far, shares, ere long, the general failure. The body becomes feeble, emaciated, and unable to repel with pristine success, the encroachments of disease. The physiognomy assumes the peculiar characters of suffering and depression. And the brain itself, if original predisposition, or intemperance, favour not the development of the secondary affection, forms ultimately the seat of incurable alteration of structure. Hence the dreary assemblage of diseases, the indigestion, the intestinal tumour, and stricture, and ulceration,—the habitual congestions of the brain, the mental depression, the apoplexy, the madness and suicide,—of many of the most distinguished legislators and statesmen who have lately appeared on the theatre of the world. In illustration of this argument, it were almost superfluous to re-trace the sufferings and fate of the exiled

Napoleon, the paralysis of the estimable Lord Liverpool;—the premature decease of the illustrious Pitt, of the lamented Canning;—the miserable doom of Romilly and of Castlereagh. If this melancholy retrospect suffice not for his conviction, let the reader turn and survey the character and fate of those master-spirits of the human kind, who have so signally adorned the literature of their age and country,—men, whose fervid genius, like that of the immortal Byron, while pouring splendour around their name, left the mind involved in wretchedness or gloom; whose intellectual light, while illustrating every object, and charming every eye around, preyed upon, and consumed, within, the powerful brain from which it emanated.*

The sordid being who expends his life and fortune in the gratification of sensual appetites, falls into an

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* What a most affecting but instructive spectacle of mental and corporeal conflict and infirmity,—of hypochondriasm, insanity, suicide, or early death,—does a retrospect of the history of literary genius, in this country, exhibit. As illustrative of these respective conditions and occurrences, the names of Johnson, Cowper, Chatterton, and Kirk White, will instantly suggest themselves to the recollection of the reader. The evidence of these melancholy facts, a slight metaphysical analysis will serve to elucidate. That peculiar constitution of mind which confers distinguished celebrity or power on an individual unhappily exposes its possessor, in a corresponding ratio, to the impressions of suffering and disease. Fervid imagination and exquisite sensibility, or uncommon ardour of mind and intensity of thought, form the distinguishing attributes,—the essential characters, of genius. And what, after all, is the moral state which such a constitution usually engenders? Incessant and exhausting excitation or inquietude. What the physical consequences to which it almost invariably and inevitably leads? Those, which characterize the destructive operation of a too powerful and restless mind upon a less powerfully constituted or enfeebled body.

extreme almost as destructive as the former, but, unlike it, utterly destitute of specious apology or retrieving grace. The powers of his system are exclusively occupied in converting, or throwing off, the enormous quantities of highly-seasoned or discordant aliment requisite to stimulate and to satisfy his pampered appetite. His days glide away in the alternate excitement of degrading propensities, and the stupor by which their indulgence is succeeded. The distended stomach loses, after a time, its wonted contractility and its energies. The brain becomes, at length, loaded from mere repletion; and its vigour and sensibilities gradually blunted and impaired. Acidity and indigestion, gout and jaundice, directly resulting from abuse of the stomach, and aggravated by the cerebral torpor consequent upon it, signalize the commencement of the ravages of disease: and effusion into the cavity of the chest, the bowels, or the brain, terminates an existence in which the moral qualities, however originally bright, have long been declining; and which the nobler passions and propensities, if ever they were developed, have well-nigh ceased to influence and adorn. Where the powers of the intellect habitually slumber, there will the stomach, in general, exhibit its greatest activity: and in proportion as the abuse of the digestive organs has been excessive, the torpor of the brain will be more strongly marked. Idiots are notoriously voracious: the stupidity of the city-alderman has long been proverbial.

These evils of sensual gratification will be, however, mitigated, and their fatal consequences averted for a time, if habits of indolence be not indulged, and sufficient exercise be regularly taken to obviate the impending plethora of the system, and, like the safety-valve of the steam-boiler, prevent the dangers of an explosion. Hence the eager sportsman, or the active man of business, may gorge his ill-fated stomach for years with apparent or comparative impunity. But the abused organ will rebel, and the hour of retribution, however long deferred, arrive, at last. Meanwhile the intellectual produce of the brain is commonly as worthless, as its culture has been neglected. To that exquisite compound of the fox-hunter and the sot, once so common, but now fortunately almost extinct in Britain, a grateful country has never yet been called upon to erect monuments in commemoration of any splendid sacrifice or achievement: literature has been indebted for no fostering patronage; and science for no improvement.

Lastly, the different organs of the animal economy may be abandoned to habits of indolence and repose, until their powers of exertion, and, in some instances, their bulk, are more or less enfeebled and reduced; and they thus become partially or utterly unfit for the due maintenance of the functions which they were originally destined to perform. This fact, the wasting and imbecillity of the lower limbs of the sedentary tailor,—the delicate and bloodless condition of the wing of the domestic fowl,—and, yet more

conspicuously, the total absence of distinctness and power in the muscles of the external ear of civilized man,*—will at once serve to illustrate. So, also, the energies of the stomach are enfeebled by protracted abstinence; of the eye, by long exclusion from light; of the brain, by inexertion. Well-regulated exercise will, on the other hand, greatly enhance the vigour of the different organs; and, of some, even sensibly augment the volume. Thus, the lower limbs of the porter, and the arms of the blacksmith, are distinguished for their size and muscular strength: and the power of vision, as of all the other senses, will be incalculably improved by constant and judicious discipline.†

From the preceding observations it results, that the various organs and faculties of the human system

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* The external portion of the human ear was obviously intended to move, like that of the inferior animal, in every direction, and, thus catching sounds from every quarter, to concentrate them in their passage to the interior of the organ. For this purpose, it is expressly provided with eight muscles. But the practice, pursued by all civilized nations, of tightly bandaging the heads of children from their birth, prevents the action of these muscles, and consequently renders them powerless and indistinct. Among some of the savage tribes, the faculty of moving the ear is still retained: and to this circumstance may be partly attributed the extraordinary acuteness of hearing which they, in common with the brute creation, are known generally to possess.

† The influence of culture, in evolving the powers of the different organs, is conspicuously evinced in the singular and almost miraculous delicacy, which the instruments of hearing and of touch acquire in those, who, from loss of sight, are unfortunately driven to depend upon them as the best substitute for the organ of vision, in their communication with the external world. On the same principle, the marked superiority of the right hand to the left, in expertness and power, will admit of ready explanation.

may be strengthened and improved by proper exercise and culture;—injured and enfeebled by an unnatural state of indolence and repose;—and that no one of them can be immoderately employed, or cultivated to excess, except at the proportionate expence,—by a corresponding sacrifice of the welfare,—of the other. These are truths alike important in physiology and in practice. Hence the inference that the difficult art of combined intellectual and physical enjoyment,—the great secret of health and longevity, consists in the regulated and equable cultivation and discipline of all the different organs. Inordinate anxiety and application of mind, and sedentary pursuits cannot, on the one hand, be long sustained without impairing the energies of the intestinal and muscular systems; nor sensual propensities, on the other, be extravagantly indulged without eventual injury and degradation of the moral and intellectual powers. Extremes of neither kind can long be followed with impunity. Sooner or later, they invariably terminate in suffering and disease. The man, therefore, who assigns an equal portion of the day to the judicious exercise of his physical and intellectual powers; who rises from his bed and retires to rest at an early hour; who satisfies his hunger, at stated periods, with a quantity of simple food accurately proportioned to the wants and expenditure of his system:—such man is the happiest, and consequently the wisest, as he will, under ordinary circumstances, incontestibly prove, the most healthy and long-lived of his species.

There are some morbid affections, which, although, for the most part, of physical origin, are yet signally kept up, and aggravated, by the operation of moral causes; and would consequently admit of correct introduction into this chapter. Among these, *Impeded Elocution* holds a conspicuous rank; and will, therefore, be selected as the subject for present inquiry. This affection, from the popular ignorance of its real source, the singular and varying character of its attendant phenomena, the restraint and misery which it inflicts, and, more than all, from the notorious failure of every remedy hitherto employed for its *permanent* removal, possesses a strong claim on the attention of the enlightened philanthropist; and is eminently calculated to excite the curiosity, and call forth the talent, of the moral and medical philosopher.

Difficult or imperfect utterance admits of division into two distinct kinds, according to the peculiar source of the disease. These are the organic and the functional.

The *Organic Infirmity* or imperfection results from original defect, from accidental lesion, or disease, of the organs remotely or immediately concerned in the process of speech. As illustrative of its more *remote* origin, the defective utterance, frequently attendant on the vicious conformation of the brain in idiotism, and on the morbid state of the organ in apoplexy and paralysis, may be cited. Congenital division of the palate, hare-lip, or other malformation, injury or morbid affection of the parts

constituting the mouth, or of the organs which it contains, are the most common agents in the *direct* production of imperfect utterance. The infirmity when arising from defective construction of the cerebral mass, or consequent on its fixed diseases, is incurable. Mechanical deficiency or obstruction will obviously yield to artificial treatment alone. Hence, the correction or removal of faulty articulation resulting from these causes, falls expressly within the province of the operative surgeon.

Functional Defect of elocution is, as its distinctive title imports, wholly independent on mal-formation, or any morbid change in the structure, of the organs of speech. It results simply from derangement of their functions. It constitutes by far the most common form of defective utterance. To it, the description, drawn at the commencement of this notice, is alone applicable; and the ensuing observations will be exclusively restricted. In the very slight outline, which can here be consistently traced of this curious and distressing affection, little more will be attempted than to review, in rapid succession, its causes; its affinity with other morbid conditions; its peculiar characters; the agents which are productive of its temporary aggravation or relief:—and to expose the principles which, from personal experience of the inefficiency of all other treatment, and from intense application of his mind to a subject the most deeply-interesting, the author is led to consider as alone capable of achieving its permanent cure.

The *exciting Causes* of impeded utterance are various. Most commonly, it may be traced to some powerful shock inflicted on the nervous system by severe disease, or a violent moral impression; sometimes to the well-known influence of the imitative propensity. Thus it has frequently been observed to succeed an attack of fever implicating the brain, or a paroxysm of deep mental agitation; or to result from constant association with an habitual stammerer. Some original peculiarity in the constitution of the mind is, however, probably requisite to *predispose* an individual to the operation of these causes. For, of the great number necessarily exposed to their influence, comparatively few suffer from the affection. And these will be usually found to possess uncommon ardour of mind, and an exquisite susceptibility of moral impressions. The irregular action of the muscular apparatus of the chest, larynx, and mouth, which constitutes the *proximate Cause* of impeded utterance, once established, will acquire confirmation from habit; and, like many other diseases, become independent on the cause from which it originally sprang. Several varieties of impediment may be distinguished in practice; but a particular discrimination of them would be superfluous: since they are referrible to no diversity of origin; and the same principle of moral discipline is, with slight modifications in the empirical method of treatment, correctly applicable to the whole.

Impeded utterance, in its nature and phenomena, exhibits a closer *Affinity* with Chorea than with any other morbid affection. This resemblance will be rendered more striking, when it is considered that the embarrassment of elocution is generally attended with contortion of the facial muscles, and often with convulsive affections of the limbs, little differing from the involuntary starting and writhing of the muscular system in chorea. Elocution, in some modifications of chorea, exhibits all the phenomena of the more common and habitual impediment. Chorea, like stammering, may be acquired by imitation or sympathy. And the same constitution of mind and body, which predisposes an individual to suffer from the one, will render him susceptible to the impressions of the other morbid state.

It is a very curious and, according to the writer's experience, an invariable fact, that, in defective articulation from a merely functional cause, the most inveterate stammerer, when alone or believing himself to be alone, can articulate without the slightest embarrassment or unnatural effort, and without particular attention to the process of verbal delivery. He can even speak, or read aloud, with the most perfect facility before a congregation of persons, however numerous: provided they are speaking at the same time; and he consequently feels that the attention of the assembly is not directed upon himself. But the moment the solitude of the stammerer is, in the one instance, broken in upon; or, in the other,

the company, among whom he is declaiming, becomes silent, the brain loses its salutary control over the organs of voice and speech; and his progress is arrested. To persons unacquainted with the real nature of impeded articulation, this fact must, and does, appear perfectly inexplicable. Astonishment is frequently expressed at the facility and distinctness of utterance with which a notorious stammerer will accompany a congregation in the public performance of the services of his religion.

Nor is such fact less valuable, than generally accurate, and unknown. Not only does it constitute an unerring criterion of distinction between impediment of speech from functional, and defective articulation from organic causes; but it incontrovertibly proves the influence exercised by the brain in production of the phenomena of common stammering; and, by indicating moral discipline as the only mean which can be confidently depended upon for its permanent removal, discloses to the inquiring mind of the sufferer and the philanthropist, views and resources which will elsewhere be more amply developed.*

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* Within the course of the ensuing year, the writer contemplates the publication of "A philosophical inquiry into the causes, the phenomena, and treatment, moral and physical, of impeded utterance." In this work, the materials of which have long been collected, and partly arranged, the writer's opinions, founded on the base of personal knowledge and experiment, will be fully detailed. Meanwhile, they who wish to become acquainted with all that has been lately written on this interesting subject, may consult Darwin's *Zoonomia;* Thelwall's *Letter to Henry*

Of the *Agents* which most conspicuously operate in *aggravating*, or *relieving*, the difficulties of impeded utterance, it will suffice to present, in this sketch, a cursory enumeration. They will be found to consist principally in the more powerful affections and different occupations of the mind; the condition of the general health; the state of the atmosphere; and the nature and quantity of the food and exercise. These agents apparently produce their effect in proportion as they exhaust, or invigorate, the powers of of the brain; and thus weaken and derange, or strengthen, the connection which should naturally exist between that organ and the muscular apparatus of speech. In demonstration of the influence of a few of these agents, which is as certain as commonly unobserved, it will not be irrelevant to state that the signs of impeded utterance are signally aggravated by anxiety of mind, or its exhausting concentration on a particular subject; by long exposure to excessive cold; and by defect of nutritious food: while a cloudless serenity of the moral and the external atmosphere will greatly facilitate to the stammerer the

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Cline, Esq.—Itard's *Mémoire sur le Bégaiement*, in the 7th vol. of the *Journal universel des sciences mèdicales;* Voisin's Monograph "*du Bégaiement*," published at Paris, in 1821; and Dr. Mc Cormac's recent *Treatise on the cause and cure of Hesitation of Speech.* The observations of Dr. Mason Good, in his *Study of Medicine*, vol. I. p. 520, are more learned and curious than practically valuable. Some very accurate views on the mechanism of speech, may be found in an able and eloquent Inaugural Dissertation, *De Linguâ Humanâ*, Glasgoviæ, 1813, by Dr. James Kennedy, of Ashby-de-la-Zouch.

process of utterance ; and a few ounces of generous wine, or a dose of Cinchona-bark, produce an almost magic effect in removing the powerlessness and embarrassment of elocution which invariably result from exhaustion of the system by protracted abstinence or fatigue.

Disorder of the stomach has, by some, been regarded as the cause,—or, at least, as a concurring agent in the production,—of impeded utterance. To this opinion, long observation and experiment are decidedly hostile. Stammering is altogether, independent, for its origin, upon the state of the intestinal canal, and insusceptible of cure by treatment directed to it. The infirmity of speech will not even suffer transient aggravation from intestinal disturbance, except as far as such disturbance may induce oppression of the brain, and thus derange or impair its influence on the organs of elocution. A disordered stomach is not necessarily inconsistent with comparative facility of enunciation in the stammerer.

The *Treatment* of impeded utterance comprehends physical and moral remedies. The *Physical* are susceptible of further division into the mechanical and medicinal.

All the secret or empirical methods, so confidently announced in these times, for the cure of impediments in speech, belong strictly to the *Mechanical* division. They evidently consist in various modifications of one common principle. The employment

of some such method will, in general, be found necessary for the regulation of that singular derangement of function from which the obstacle directly proceeds: and the selection of the peculiar mode is, probably, an object of far less moment than an unconquerable energy and resolution on the part of the pupil. The great defect of all systems, purely mechanical, is that their influence, however striking and beneficent at first, will not be durable. They remove, for awhile, the consequences; but leave the moral causes of the infirmity in undiminished operation.

Medicinal Remedies are not essential, as some interested writers have lately asserted, to the successful treatment of impeded utterance. Yet, skilfully selected and employed, they will accelerate the efficacy of a system of cure which rests upon comprehensive and philosophical principles. Thus, the embarrassment of articulation will be greatly relieved, and its removal assisted, by the prescription of tonic medicine, invigorating exercise, the shower-bath and generous diet,—in fact, of every agent that is calculated to sustain or elevate the physical powers, and rouse the spirit of the stammerer from the state of morbid susceptibility and depression into which it is almost invariably plunged.

Yet no physical treatment, however judicious and effective, will, of itself, permanently avail. Deep and bitter will be the disappointment of those who shall rely on it as a protection from the recurrence of

their infirmity. A rigorous system of *Moral Discipline*,—long and unwearied exercise in concentration of the mind upon the process of speech, and in the practice of self-control, will be requisite to burst asunder the mystic links of morbid association, and effect a revolution in that moral state with which the evil habit is so closely interwoven. Perfect freedom and fearlessness of mind, insensibility to the ridicule and the scorn of the ignorant and vulgar, a generous contempt for popular opinion, such an elevation of character and feeling,—such moral courage,—as a sense of moral purity can alone inspire,—constitute the goal to which the aspirations of the stammerer should be unceasingly directed. This gained, recovery is no longer desperate. Every remaining obstacle will vanish before the auxiliary power of physical treatment. To achieve, therefore, his lasting liberation from the dreadful bondage of impeded utterance, the individual should possess a mind not only strong in philosophy, but further sustained and enlightened by the moral virtues. The sufferer may, perhaps, be cheered on and stimulated to increased exertion by the assurance, that, while he incalculably promotes his own happiness and utility by this noble conquest of the infirmities of his nature; it will be impossible for him to acquire the necessary dominion over his feelings, and bring into due subjection his impetuous passions, without diminishing, at the same time, his susceptibility to the influence of the causes of disease, moral and physical; and thus

rendering himself a more robust, a wiser, and a better man.

Slight as is the preceding view of the effects of inordinate intellectual labour,—of the operation of moral causes,—upon the functions of the human organs, it would be still more defective, if the baneful *Influence of early Mental Exertion upon the physical development of Children* were passed over without notice. There exists not a more grievous or prevalent error than the solicitude which parents usually evince, to stimulate the young mind to efforts which it is incapable of sustaining with impunity; and to exhibit their children as prodigies of erudition or of skill in literature or the arts.

The susceptibility of intellectual culture will, it is obvious, be generally proportionate to the more perfect evolution of the organs by which the process of mental attainment is executed. In other words, the mental faculties will bear a close relation to the development of the brain in any individual case; provided such development be not connected with morbid structure: and it has, heretofore, been shewn that, in proportion to the extraordinary vigour and improvement of its powers, the diseases of an organ, when once induced, will assume a more severe and active character. From these positions it results that the brain of a child, possessing large capacity of culture, can never be urged to inordinate exertion, except at the expence of physical welfare, and consequent risk of exposure to suffering and disease:

and that, under no system of discipline, will the more feebly constituted or less capacious mind make advances in learning at all adequate to the labour and anxiety incurred by the teacher, or the injurious restriction sustained by the student, in the futile essay. Common observation may be appealed to as illustrative of these facts. Every village-schoolmaster will attest the marked superiority in physical strength and development, which distinguishes the youth of limited capacity, from the delicate boy of fervid imagination or striking pre-eminence in mental power: and so peculiarly frequent and severe are the diseases of children who exhibit an extraordinary or precocious intelligence, that their doom to suffering or early death forms a subject of common prediction among the sages of the nursery.

It may even be questioned whether the literary acquirements of early age are worth the sacrifice and the risk incurred in their pursuit. Many a weakly stripling has spent the brightest and most joyous years of a precarious existence in irksome drudgery upon the works of Homer and of Virgil, long ere his mind could comprehend the majesty of the Greek, or be smitten with the splendour and elegance of the Roman Poet. And what, after all, has he acquired that can compensate for the lost opportunity of more fully evolving his physical powers, and fortifying his constitution against the inroads of future disease?—A knowledge of which, in riper age, a few months' application, under an enlightened system of instruc-

tion,* would have given him a far more perfect possession; and in the attainment of which a matured intelligence would then have afforded the most exquisite gratification.

Still the young mind should not be suffered to run wild without culture or restriction. It must be employed; or, like the stagnant pond, it will generate weeds and impurity upon the surface. But the occupation should be such as will combine amusement and active exercise of the limbs with the acquisition of knowledge; and expand the germ of intellect without cramping, in their development, the animal organs. Such are the principles upon which the education of youth, and especially of the more highly intellectual and delicate, should be conducted. For this purpose, Natural History offers a field, as constantly accessible as boundless and delightful. Trained to examine, and to discriminate with accuracy, the various productions of the world around,

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* Arguments for and against the Hamiltonian system of education have been very ably sustained: and the public opinion respecting it yet remains unsettled. The evidence of one who has largely availed himself of its principle in the solitary acquirement of several languages may, therefore, not be unacceptable. As an instrument of elementary instruction, Hamilton's plan is decidedly the most eligible that can be employed. It constitutes, in fact, the identical process by which the child is taught to comprehend his vernacular tongue. For deep acquaintance with the subtilities of a language, it is not intended, and will not avail. It bears somewhat of the same relation to the more ordinary method of instruction, as the sexual, to the physiological system of botany. The former are simply calculated for the acquisition of elementary knowledge: the latter, essential to a profound and philosophical understanding of the respective sciences. On this subject, see an ably-written article in the *Edinburgh Review*, vol. 44, p. 47.

the mind possesses a source of occupation and of light, of which no ordinary vicissitude can afterwards bereave it. The study of nature, indeed, is not less salutary in its influence, than unchanging and inexhaustible in the recreation which it affords. It purifies the mind from the dross of sensuality, and raises it above the degradation of low and selfish pleasures. It calls forth a spirit of observation, and exercises a discipline, which may become powerful instruments in facilitating the acquisitions of future years. It gives zest to the enjoyments of prosperity and meridian life, and solace and ornament to the season of adverse fortune or of decay: and, more than all, will, when profoundly contemplated, inspire far deeper convictions of the Omnipotence of the Deity, and the wonders of the glorious creation, than ever resulted from efforts of human eloquence the most fervid or sublime. And the mind, having attained its full maturity of development and power, will seize with equal energy and success all the various branches of literature and science which may be requisite to satiate the intellectual voracity, or essential to a vigorous prosecution of the destined path in future life.

CHAPTER V.

OF THE INFLUENCE OF PHYSICAL OR MUSCULAR EXERTION, CONSIDERED AS AN EXCITING CAUSE OF DISEASE.

IT has already been observed that exertion of the physical powers, carried to excess in violence or duration, most commonly operates in predisposing the animal body,—in rendering it more susceptible,—to the influence of disease;—that it assumes, in fact, the character rather of a predisponent than of a directly exciting cause. Experience, however, unquestionably proves that the contractions of a muscle may be so violent as to rupture its fleshy fibres or its tendon, to tear asunder a compact bone; or cause dilatation or rupture of the heart or blood-vessels; and thus become the direct source of lameness, aneurism, or hemorrhage: or that the exertion of the whole muscular apparatus may be so long-continued as to induce dangerous and even fatal exhaustion of the vital powers; or, from subsequent re-action of the system, all the phenomena and consequences of the inflammatory state. Under these circumstances, the excess in question evidently exerts a direct influence in the production of disease.

In the present artificial state of society, numerous individuals are inevitably called upon by the nature

of their occupation, to sustain *Inordinate Muscular Exertions*,—to make heavy and most injurious sacrifices of physical comfort and repose. Such individuals, if they would avert the dangers attendant upon excessive corporeal labour, should employ circumspection in their dietetic indulgences. Their food should be neither too copious or scanty in bulk, not too stimulating or diluent in its properties. The supply should be accurately proportioned to the waste; the income to the expenditure, of the system. Simple but substantial aliment should be taken in such quantities as will afford adequate support to the physical energies, without inducing dangerous repletion of the heart and blood-vessels. But if the limits of prudence be frequently or habitually transgressed;—if strong and stimulant food be taken to excess;—congestions of the brain or the inferior organs will certainly ensue; and, sooner or later, be followed by their dangerous or fatal consequences, hemorrhage* or inflammation. These dietetic ex-

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* Spontaneous hemorrhage, although, in most cases, a salutary, may always be regarded, as a suspicious process. For it indicates the existence of some general or local congestion which renders such evacuation necessary. Occurring from the membrane of the nostril, it is rarely dangerous. But copious or repeated discharges of blood from the lungs or intestinal canal are greatly to be dreaded. Blood-letting, purgatives, low diet, and repose,—in fact, all such remedies as operate by tranquillizing and reducing the increased action of the heart and blood-vessels, are applicable to hemorrhage from general repletion. In these cases, common salt-petre (nitrate of potash) administered, in drachm-doses, to an adult, is singularly efficacious. When, on the other hand, the discharge proceeds from local congestion, nutritious but unstimulating diet, light tonics, moderate exercise, and the shower-bath, preceded, in some instances, by local abstraction

cesses, adopted under the specious pretext of sustaining the system in its extraordinary exertions, and encouraged by the sense of vigour and comfort, which they, at first, insidiously inspire, are the bane of the well-paid mechanic, of the active commercial traveller, and the thriving agriculturist. How often men of this description are suddenly cut off in the vigour of apparent health, and the meridian of life, by overwhelming affections of the heart and brain, or by the unsuspected and more tardy ravages of disease in the stomach or liver, a retrospect of the public journals and of many a painful event in private practice will suffice to shew.

Whenever, on the other hand, the supply of food is, in quality or bulk, inadequate to the necessities and the waste of the system, evils of an opposite character will be induced. By this defect, the powers of the body are directly exhausted. It operates, like hemorrhage and the other depressing agents, by deranging the balance of circulation; and thus brings on, or favours, in connection with general debility, congestions of particular organs. The deve-

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of blood, will restore the equilibrium of circulation, and arrest the hemorrhage. Hence, correct discrimination of the immediate cause of such discharges is highly important in practice. Some of the metallic salts possess an extraordinary power of subduing internal hemorrhage. But, in the active forms of the evacuation they should never be employed, until the fullness of the system has been relieved by depleting remedies. Prematurely administered, they may, by interfering with a salutary or comparatively harmless process, induce fatal extravasation in the brain, lungs, or intestinal canal.

lopment of low fever, scrofula, and the hideous train of cutaneous diseases, is signally promoted by want of nutritious food. The influence of this cruel state of privation is conspicuously exhibited by the hardly-worked and ill-fed population of manufacturing districts, especially in seasons of scarcity or great commercial distress. Confinement to hot and imperfectly ventilated rooms, the too common neglect of cleanliness in person and habitation, and the constant recurrence to stimulating liquors whenever accessible, give a dreadful impulse to the operation of this frequent cause of disease among the manufacturing poor.

Defective Exercise of the physical powers may be regarded as operating, still more invariably than excess, in predisposing the system to disease. Its influence as an exciting cause would, indeed, under ordinary circumstances, be difficult of comprehension. That, in combination with luxurious and intemperate habits, corporeal indolence does powerfully favour the morbid accumulation of fat in the cellular membrane, and aggravate the immediate dangers, and expedite the consequences, of dietetic excess, is sufficiently notorious. In the opulent innkeeper and the retired tradesman, examples of the effect of this baneful combination are every-where to be seen.

And even where the rules of temperance are rarely or never violated, the want of regular exercise is still productive of consequences highly injurious

to the physical and moral welfare; although not so strongly marked in character, nor so rapidly destructive in operation, as those which have just been reviewed. The energy of the bowels is impaired; and their functions rendered torpid, by the defect of muscular exertion. Hence the chronic diseases and habitual constipation of sedentary females:* Hence the intestinal affections which, induced by the united influence of rigorous confinement and severe intellectual labour, too often cloud the prospects, or shorten the existence of literary and scientific men. From this source, in short, arises a train of sufferings and symptoms which, when aggravated by intense application of the brain, or by undue repletion of the

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* This is particularly the case with the unfortunate young women who are doomed to earn a hard subsistence by working for the more fashionable dress-makers and milliners, in large towns. The following paragraph is transcribed from a London paper, dated July 20th, 1828: "An inquest was, on Friday, held on the body of a young girl, 19 years of age, named Catherine ———, at the Argyle Arms, Argyle-street, who died from the consequences of being overworked and exhausted, while apprentice to a fashionable dress-maker. It appeared that she had often been obliged to work eighteen hours out of the twenty-four; and that it was the constant practice among the young creatures who were doomed to gratify the caprice of fashion. The jury returned a verdict. 'Died by the visitation of God;' but strongly reprehended the practice of exacting so much labour from females, whose health must be destroyed, if deprived of air and exercise." From a subsequent report, it may be inferred that the poor young creature died of an affection of the brain.

Language has not expressions sufficiently powerful with which to reprobate and decry this inhuman sacrifice of human victims to the idol of fashion In that admirably conducted journal, "the Times," some philanthropic writer, under the signature of "A Physician," has feelingly denounced the practice of this worse than West Indian slavery in a Christian land. Notwithstanding the late attempts to ameliorate their condition, many of the children employed in the cotton-mills of England, are not, it is to be feared, much more humanely treated.

stomach,—abstinence or intellectual repose may, for a while, relieve; but which nothing, except correction of the error from whence it originated, can permanently dissipate.

Whenever, therefore, an individual is inevitably destined to a sedentary or inactive life, he should, in accordance with the principles which nature and experience alike prescribe, cautiously regulate the measure and quality of his food by the diminished wants of his system and the peculiar circumstances of his situation. In a state of muscular inactivity, especially if the brain be much employed on intellectual operations, the system will require a very moderate supply of nutriment: and it fortunately happens that, under these circumstances of reduced expenditure, the stomach, in general, evinces little inclination to receive food. For by exclusion from the influence of fresh air and exercise, both the appetite for it, and the powers of digestion, are usually much impaired. And if, as sometimes happens, the activity of the stomach do, in this state of privation, survive and habitually exceed the exigencies of the system, the superfluous blood, resulting from such excess, will either be carried off by the salutary process of spontaneous hemorrhage;* or become a source of

* Hemorrhage exerts its salutary influence by unloading the vessels of the system, and thus averting or removing that inflammatory state which is an usual consequence of congestion. When, therefore, an individual exchanges, all at once, active for sedentary occupation, without making a correspondent change in the nature or quantity of his food, hemorrhage or congestion will generally follow.

congestion in some organ, and of the morbid phenomena and dangers consequent upon it. Rules of abstinence and simplicity in diet cannot then, if these positions are correct, be too rigorously observed by the studious and the sedentary. And not only will the general health be preserved from injury, and many sources of mental and physical suffering be avoided; but the powers and the process of intellectual application will be signally strengthened and facilitated by an undeviating adherence to the paths of dietetic moderation.

A familiar example will render the correctness of these views as evident as their practical value. If the severe student indulge his appetite with a full meal of solid animal food and wine and return immediately to his sedentary labours; not only will he have to struggle against an overwhelming sense of stupor and inaptitude for intellectual exertion; but, after a lapse of hours, his internal feelings will unerringly evince that the oppressive load yet remains almost unacted upon by the torpid stomach. Nor will the mind recover its vigour, nor the spirits their wonted elasticity, until a period of mental repose has intervened; and, by the efforts of nature or of art,

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And what is the obvious remedy which reason suggests as applicable to these cases? Not an effort at imperfect and temporary relief by artificial evacuants; but an effectual suppression of the evil at its source, either by a resumption of the previous active habits, or by a reduction of the supply of alimentary substances to the lowest point consistent with the sustenance of the general health and vigour.

the digestive organs have been relieved from the obnoxious burthen. But if, on the contrary, the literary recluse wisely content himself with a light and frugal repast, digestion will be tranquilly accomplished without exciting any painful consciousness of the intestinal process; and produce no perceptible obscurity of the intellectual powers, or embarrassment in their exercise.

The preceding principles apply almost exclusively to the habits and occupations of an individual in ordinary health. It may be right, however, to observe further, that, while defect of exercise, especially in combination with intemperate habits, favours the occurrence of congestion in the different organs; excess of muscular exertion will, by exhausting the powers of the system, maintain or aggravate such congestion, when it has been induced; and, with equal certainty, will moderate exercise remove it by imparting vigour to the frame, and restoring the natural equilibrium of the circulation of blood which had previously been deranged.

It frequently happens that the physician is called upon to decide whether muscular exertion should, or should not, be employed, in a given instance, immediately after the introduction of food; and, almost as commonly, is his answer determined by the recollection of some abstract principle,—the retrospect of some insulated fact,—in general physiology; and not by careful examination of the peculiar circumstances or situation of the individual in whose behalf his opinion has been solicited. Thus, the celebrated

experiment of the two dogs, instituted and detailed by Professor Harwood,* is invariably adduced in solution of the present difficulty; and inferences, drawn from an imperfect observation of the propensities and functions of an inferior animal, inconsiderately applied to elucidate the physiological conditions of an intellectual being.—Experience, however, will suggest to the enlightened observer of man more correct and comprehensive views. It will teach him that, in an individual who enjoys ordinary health, moderate exercise, directly consequent on a meal, rather facilitates than disturbs the process of digestion; and that excess of labour operates in suspending, or retarding, the execution of this process, only in proportion as it unduly diverts the current of nervous energy from the intestinal to the muscular system.

If, on the other hand, the individual be suffering from derangement or torpor of the stomach complicated with general debility, rest after food may be

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* Two dogs were fed to repletion. Of these, one was afterwards suffered to indulge the sense of drowsiness induced by a full stomach; the other subjected to violent exercise. After a lapse of a certain time, both animals were destroyed. In the first, digestion was completed; and the stomach empty: in the other, it had not even commenced. This experiment, however, is by no means conclusive. Several objections may be started to the inferences which have been deduced from it. In the first place, experiments, made on the lower animals, cannot be regarded as precisely applicable to the illustration of the human functions, modified as they unquestionably are, by the operation of intellect and the various passions. And, again, had a third dog been fed like the two others, and merely kept afterwards in such exercise as would have moderately employed, without exhausting, the energies of the system, might not the digestive process have been almost as perfectly executed as in the first subject of the experiment?

most advantageously prescribed: especially where the patient is of placid temper, and possesses the rare and happy power of abstracting his mind from all painful or deeply interesting subjects of contemplation. A state of muscular repose should, however, be carefully distinguished, in prescription, from that of sleep: for in the peculiar condition of the brain, which constitutes sleep, digestion, like all the other functions of the animal economy, is more tardily executed than in the waking hours.* Hence the inconvenience, or even danger, of retiring to rest immediately on the ingestion of a full meal. These consequences will be aggravated if the energies of the system have been previously exhausted by inordinate physical or intellectual exertion.

Still the digestive process will be more certainly and deeply impaired by intense application or anxiety of mind immediately after the reception of food, than even by active exercise of the muscles. Consequently, in a patient, of anxious disposition, ardent feelings and imperfectly subjugated passions, the stomach will sustain less injury from moderate exertion of his muscular system after a meal, than from a state of repose which will leave the mind to prey upon itself, and thus to exhaust the energies of the brain on the process of thought, at the expence of the

* Many persons, on sleeping after dinner, experience a paroxysm of that peculiar description of head-ach, and that general sense of oppression, which a stomach loaded with undigested aliment is familiarly known to induce.

intestinal organs. Where the powers of the stomach have been very much impaired, even the perusal of an interesting book, while digestion is going on, will, upon the same principle, greatly impede, or altogether defeat, its proper execution; and hence by the vigilant physician will be rigorously prohibited.

The review of some of the preceding subjects may, perchance, be reprobated by the fastidious reader as a deviation from the avowed object of the chapter into which they have been introduced. But they involve views and consequences too momentous to be utterly excluded: and no other equally fit opportunity for their discussion will occur at present. The advantages and disadvantages of the different kinds of exercise, and their peculiar application to the various cases and circumstances of disease, will, on a future occasion, be clearly explained and developed.

CHAPTER VI.

OF INTESTINAL IRRITANTS, CONSIDERED AS THE EXCITING CAUSES OF DISEASE.

Intestinal Irritation most commonly results from the action of the various substances introduced by design, or accident, into the intestinal canal; or of different bodies spontaneously generated or developed there. Or it may be the consequence of a process naturally arising in the progressive evolution of other organs. Under the former division, may be included the numerous articles employed for human sustenance; medicinal remedies, particularly the intestinal poisons; foreign bodies acting mechanically; intestinal concretions; and the different species of intestinal worm. The process of dentition in children falls correctly within the latter.

In the last chapter, some of the principles of diet, in their more obvious connection with the exercise of the muscular powers,—with the habits and occupations of individual life,—have been briefly stated and exemplified. It remains, in the present, to be shewn how these principles, and especially *the Direct Operation of Alimentary Substances upon the human System,* are modified by age, by intellectual constitution

and culture. Of these views, a rapid sketch only will be now required. Their practical application will form the subject of future discussion.

It is a remarkable fact, and strikingly illustrative of the correctness of the opinions advanced in the preceding pages, respecting its influence of culture of the mind, and of the various passions, on the intestinal functions, that the youthful in years, and the deficient or untutored in intellect, are able to devour with impunity, and digest with apparent ease, dietetic substances of such a nature, and in such quantities, as would violently derange the stomach of the intellectual and refined in the meridian of life.

The child gorging its stomach with unripe fruit or sweetmeats until the oppressed organ can absolutely receive no more;—the idiot devouring with indiscriminate rapacity the most discordant and unwholesome substances that come within his grasp;—and the sturdy ploughman washing down his coarse and copious meal with equally abundant libations of sour beer,—may be adduced as familiar illustrations of this hitherto unrecorded truth. Yet how rare of occurrence, how light and transient when they do occur,—are the sufferings which, in such individuals, result from repletion with ill-chosen or indigestible articles of food. The stomach, when distended beyond the limit of endurance, resorts to a simple and efficient process for relief. Vomiting ensues: and the organ, scarcely, if at all, deranged by the efforts of rejection, is soon able to evince that its wondrous powers

of accommodation and dispatch have come off, from the conflict, unimpaired. Let the anxious-minded statesman or merchant, the severe student or devoted man of science, commit in evil moment, an error of diet thus flagrant. Symptoms, the most violent and distressing, will speedily be developed: and days, or even weeks, of abstinence, medicinal discipline and confinement must elapse ere the organs of digestion perfectly recover from the shock which they have sustained. Upon the principles heretofore exposed, this diversity of operation is at once explicable.

In the youthful subject the tempest of the passions has not yet arisen. The cares and distractions and anxieties,—the burthen of sustaining a rank and character in the world,—are yet unfelt. The mind enjoys an almost uninterrupted state of sunshine and repose. The energies of the brain,—the supply of nervous power,—are exclusively expended on the important process of nutrition and of growth. Derangements of the stomach rarely occur, after the second year, except from some glaring error or excess in the introduction of food;* and, when thus

* Bowel-complaints, it must be allowed, are very common in young children. Some time must obviously elapse ere the delicate membrane of the intestinal canal can acquire the requisite insensibility to the unwonted stimulation of alimentary substances. This, however, is a source of disturbance as comparatively trivial as transient. When the great quantities of saccharine and consequently fermenting food,—the varieties of stimulants and anodynes,—with which, on the slightest expression of uneasiness, the stomach of the unfortunate infant is usually deluged

induced, will spontaneously subside, or yield with comparative facility to medicinal treatment, on removal of the exciting cause: since they are not sustained and aggravated by the re-active influence of an anxious and congested brain.

The same reasoning may, with equal correctness, be applied to explain the exemption from physical suffering so conspicuously exhibited, under circumstances of similar dietetic negligence or voracity, by the idiot and the boor. In them, as in the inferior animal, introduction of food and excretion of the refuse, alternate labour and repose, and the maintenance of the species, constitute the only occupations and objects of a merely sensual and degraded existence. Their cares extend not beyond the limits of the day which is passing over, or provision for the simple meal which they are about to devour. Morbid sensibility of feeling, ardent and restless aspirations for worldly honours, and influence, and distinction, disappointed ambition and wounded pride, disturb not their serenity of mind, nor interfere with the vigorous and healthy performance of the process of digestion.

Individuals, moreover, when far advanced in years and exempt from the baneful presence of any parti-

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by the stupid or slothful nurse,—are recollected, wonder must be felt that so many survive the perilous ordeal. If the child were exclusively fed on the aliment provided by nature, and the mother duly circumspect in her dietetic indulgences, this cause of infant suffering would be, in great measure, avoided. The young of the inferior animals are singularly exempt from intestinal disorders.

cular morbid affection, may often be observed to abandon with impunity those dietetic restrictions from which, in the meridian of life, they had never been able to deviate without great inconvenience or suffering. The principles, before exhibited, are perfectly adequate to the explanation of this curious fact. In the progress of age, the sensibilities, passions and anxieties, which grace, agitate, or deform the human mind in the zenith of its power, are gradually blunted, tranquillized, and allayed. And the absence of this fertile source of moral irritation, the suppression of this incessant expenditure of nervous power, are so beneficially felt that they more than compensate for the weakness of stomach induced, like the decrepitude of all the other organs, in the process of natural decay. Old age has been beautifully designated by Shakspeare, a second childhood: little conscious that, in a highly poetical illustration of the effects and infirmities of the senile state, he had disseminated an important physiological truth.

In the cursory review of the operation of *Medicinal Remedies* on the human system, which the plan and limits of this Essay will alone allow, the absurd and mischievous practice of drenching children with them, on the occurrence of every slight indisposition, cannot be too severely or earnestly reprobated. The diseases of childhood are usually simple: and, neither sustained nor aggravated by the more violent or depressing passions,—by agonizing retrospect or gloomy anticipation,—in general, yield with facility

to simple treatment. Inordinate ingestion of food, or exposure to sudden vicissitudes of temperature may be regarded as their principal exciting causes: and to one or other of these, their origin may commonly be traced. Temporary abstinence and confinement will as frequently accomplish their perfect removal. Sometimes, however, the aid of an emetic or a purgative may be required. The diseases of dentition, and the various specific affections which attack childhood, are obviously excluded from this description.

Again, active disease may demand the interposition of powerful remedies. It can only, indeed, be combatted with success by corresponding activity of medical treatment. In this country, however, too much reliance is placed on the operation of medicinal substances; and a quantity, greater than requisite, is consequently employed.* Whenever, for

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* No reflection upon the character of the surgeon-apothecary is here intended. The fault belongs not to him, but to the system. There exists not a more liberal and enlightened professional body than the general practitioners of medicine, at this day, in England; nor a set of men more inadequately, more disgracefully, remunerated for their services. They are expected to receive the education, and sustain the rank and character, of gentlemen; and paid as tradesmen. They are driven, by the present degrading mode of remuneration, to employ an unnecessary quantity of medicine; and then most unfairly and inconsistently reviled for the requisite attention to their own interests. They make sacrifices of health and comfort, and submit to privations, for which fortune or celebrity can make no recompense. They live in a state of incessant anxiety and distraction, and frequently sink into premature decay without the consolation of having made an adequate provision for those whom they leave behind. It is not by the intrinsic value of a few paltry drugs, that the services of such men should be estimated or their charges fixed. It is for the time and fortune expended in education, for the ex-

the cure of congestion, or other chronic derangement of an organ, it becomes necessary to effect a complete revolution in the system, the object will be far more safely and efficiently attained by a judicious and rigidly observed plan of diet and exercise, than by lavish prescription of less certain and natural agents. In support of this argument, the high authority of Mr. Abernethy's opinion may very properly be adduced.

In those cases, which absolutely require the employment of medicinal remedies, the least violent and stimulating that can be selected, consistently with their effective operation, should invariably be preferred. By the incautious or indiscriminate administration of the more acrid substances employed in pharmacy, the natural sensibility of the mucous membrane of the intestinal canal is, at first, unduly excited; and afterwards proportionately blunted and impaired. From this source, particularly when the young or delicate are the objects of such drastic discipline, emanate, it has been confidently asserted by experienced men, many of those intestinal diseases by which human existence is too frequently embittered or destroyed. Even the lesser evil of accustoming the bowels to a stimulant, without an

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hausting labour and still more exhausting responsibility and solicitude incurred in practice, that they demand, and are entitled to, remuneration. The public, be it remembered, must ultimately suffer most from that short-sighted policy by which the medical practitioner is injured and degraded.

habitual recurrence to which they may never again regularly perform their functions, is sufficiently grave and obvious to inspire circumspection, and prevent undue severity or rashness, in the administration of medicinal stimulants.

The importance of simplicity in prescription cannot, in the last place, be too strongly insisted on. By an admixture of some of the more discordant pharmaceutical substances, a compound will frequently be formed, the nature and operation of which the most profound chemist, or experienced physician, cannot calculate or comprehend. Upon this principle, the combination of two chemical agents, except when the constitution of a given compound is designed, should be studiously avoided. Some of these substances, in themselves safe and highly efficacious, may, indeed, by injudicious combination with others, be rendered violent and even dangerous, or partially or utterly inert in their operation on the animal economy. There are also a few medicinal agents upon which certain articles of diet are well known to exert a modifying influence.* It will, here, be proper to observe that the many of the intestinal remedies, employed in medicine, particularly the

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* Thus, the vegetable acids, largely taken after a dose of Calomel, or during the continued employment of other compounds of mercury, or of lead, will sometimes induce pain, irritation, and even dangerous disturbance, of the bowels. When, therefore, it becomes necessary to introduce these agents into the system, the dietetic employment of the acids should be strictly prohibited.

most potent and valuable, are, in fact, poisons; and directly operate as such, when carelessly or criminally administered.

The *Intestinal Poisons* consist of substances derived either from the animal, the vegetable, or the mineral kingdom. A few of them are supplied by more than one of these great domains of nature. Of the substances, in question, some exist, and are employed, in a natural state. The majority, however, require pharmaceutical preparation, or are the result of various processes in chemistry.

The principal purely *Animal Substance*, which invariably operates as a poison, when introduced into the human stomach, is the *Cantharis* or Blistering-fly. Admirably adapted for employment, both internal and external, in various forms of disease, this valuable insect has frequently, in the hands of the ignorant or designing, induced violent irritation, or an inflammatory state, of the mucous membrane of the intestinal canal and bladder.* Under an erroneous and exaggerated impression of its powers, the

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* A strong middle-aged man was involved in dreadful suffering by the wanton introduction of this poison into his beverage. It induced an irritable state of bladder with symptoms closely resembling those of stone. Under the erroneous impression that a stone actually existed, a sound was twice introduced. The disease had continued six years, and reduced the patient to extreme emaciation, when an offensive pus-like secretion took place from the bladder. To sooth pain, and support the system in its apparently hopeless struggle, opium and cinchona were then largely prescribed. From that period, recovery commenced; and the patient died, several years subsequently, of hernia, without experiencing the slightest recurrence of the urinary complaint.

Cantharis is, indeed, so commonly prostituted by the vulgar to a mischievous or criminal purpose, that legislative measures should be adopted to prohibit or restrict its public sale. The treatment of poisoning by this agent, and of the consequences resulting from its abuse, will not differ from that which is employed to counteract the influence of the other acrid or corrosive poisons.

There are yet several animal substances, which, as their ingestion is not invariably, or even usually, followed by noxious consequences, may possess no apparent claim to introduction here. Still, as in certain states of the animal itself, or of the individual feeding upon it, these substances have been known to assume the character, and produce the effects of the more ordinary poisons, no apology for a transient allusion to them will be required. The principal of these occasionally poisonous animals belong either to the fish, the amphibious, or molluscar classes.* The

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* See a learned communication on the Poison of Fish, by Dr. Chisholm, in the 4th volume of the *Edinburgh Medical and Surgical Journal;* another, by Dr. Burrows, in the 3d of the *London Medical Repository;* and an interesting paper in the 10th of the *New Medical and Physical Journal.* The following case was, in 1817, observed by the writer. A healthy female, aged 30, partook, for her evening meal, of the common mussel (mytilus edulis). She was, soon afterwards, seized with pains of the stomach, sickness, tremors, fainting, giddiness, and loss of sight. Next morning, she exhibited a very peculiar expression of eye and countenance. The pupil was dilated; cheek pale; pulse weak and fluttering; skin cold and damp. She complained of listlessness, nausea, inability to stand, tremor and indistinct vision. The intestinal canal well evacuated, sulphuric ether was given, at intervals, with decided relief: but several days elapsed ere the consequences of the poison were perfectly removed. The husband and two daughters, who ate also of

cod-fish, the conger-eel, the turtle, and the common mussel, afford examples the most striking and familiar of this hitherto inexplicable fact. The peculiar circumstances of the consumer or the consumed, which favour, or determine, the operation of fish-poison, seem utterly to have eluded every effort at detection. It cannot, however, be too generally known that Oysters, eaten even in moderation by child-bed women, frequently excite the most alarming and dangerous symptoms. Instances are, in fact, upon record, where the life of the female, in a situation which renders her an object of peculiar sympathy and interest, has been sacrificed without suspicion to this apparently innocent indulgence.*

The *Prussic*, or *Hydro-cyanic Acid*,† as existing both in animal and vegetable substances, next presents

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the mussels, were not, in the slightest degree, affected by their meal. A very unpleasant cutaneous eruption, possessing the characters of nettle-rash, is sometimes excited by the dietetic employment of fish.

* See a valuable paper "On the effects of certain articles of Food, especially Oysters, in women after child-birth," By the late Dr. John Clarke, *Medical Transactions of the College of Physicians*, vol. v.

† By the employment of this poison, the unfortunate Captain Montgomery, a few days since, anticipated the work of the executioner in the condemned cell at Newgate. In Hufeland's journal (*Journal der practischen Heilkunde*) for 1815, the case of a man is related, who, on taking the contents of a small phial of this concentrated acid (the Acidum Zooticum of the Germans) instantly fell down; and with the exception of three deep expirations which took place in a few minutes, exhibited afterwards no sign of life. Scharinger, a Vienna professor, is said to have died very shortly after the application of a small quantity of it to his naked arm. A drop of the acid, introduced into the eye, or upon the tongue, of a dog, causes immediate death. Suspension over the mouth of a phial containing it, is equally fatal to a bird. In a most excellent article, which appeared in the *Lancet* of August 16th, 1828, seven epileptic patients are reported to have been destroyed,

itself for examination. It is unquestionably the most powerful poison which these islands afford. Swallowed in its concentrated form, this tremendous agent destroys life almost instantaneously. Various antidotes have been employed, or proposed, to counteract its deadly operation: but, in the absence of successful experiment, none of them are yet entitled to confidence. Indeed, the rapidity of its destructive influence is such that time will rarely be allowed for the interference of art. Prussic acid is contained in the leaves, flowers, and fruit of the cherry-laurel, the peach, the bitter-almond, and in various other vegetable productions. Hence, the fatal consequences which have been known to result from the dietetic employment of distilled laurel-water, and of the liquors, and articles of confectionary, in which the laurel-leaf, or the almond, constitutes a principal ingredient. The brain and nervous system obviously first experience the operation of this poison. As a remedy for pulmonary consumption, Prussic acid does not sustain the reputation, or merit the confidence, which, under the auspices of Dr. Granville, it had once acquired. Of its efficacy in indigestion, the

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in one of the French hospitals by an error in the administration of prussic acid. From that article, in which the chemical and medicinal history of this substance is concisely but luminously traced, the following is an extract: "In respect to the antidotes to (concentrated) prussic acid, strictly speaking, there are none."—"If the symptoms have been produced by a dose of the weak acid, or by plants which contain it, it is advisable first to excite vomiting by means of tartar emetic, and then to administer ammonia, brandy, camphorated spirit or oil of turpentine separately or conjointly."

writer possesses no practical knowledge. Theoretical views would seem to sanction its employment in some of the more irritable states,—in morbid sensibility,—of the intestinal canal.

Among the poisons, exclusively derived from the *Vegetable Kingdom*, the *Oxalic Acid* ranks first in consideration, if not in power. The frequency of fatal mistakes from its common employment in domestic economy, and from its resemblance in external character to Epsom salts, imparts to this substance a peculiar interest. It may be readily distinguished from the sulphate of magnesia by its acid taste. It exists plentifully in several well-known plants, as the beautiful Wood-sorrel; but, obtainable from saccharine matter by a chemical process, it has acquired the vulgar name of *Acid of Sugar*. In cases of poisoning by this substance, the stomach should, as soon as possible, be made to evacuate its contents; and copious draughts of warm water, in which chalk, lime, or magnesia has been suspended or dissolved, be subsequently administered to dilute, or decompose, any portion of the acid still unexpelled.

The *Atropa Belladonna*, or deadly Nightshade, improperly introduced into the system, operates as a terrible poison. Even the external application of its leaves to a sore has sometimes been productive of alarming consequences. Hence its employment should be exclusively restricted to professional men; and the patient be invariably apprized of its probable opera-

tion. Its effect, in various forms and circumstances of Neuralgia, is, in general, decidedly beneficial.*

Opium in all its various preparations, Henbane, Hemlock, Tobacco, Foxglove, Thorn-apple, Monkshood, the Garden and Woody Nightshade, and certain species of the numerous tribe of Fungi, are the other vegetable substances, from the ignorant or incautious employment of which, as being readily accessible, distressing accidents most frequently occur in this country.

However injurious be the habitual employment of *Opium* in large doses, it is very certain that this agent produces, in some individuals, a feeling of enjoyment and of tranquillity which none, but those who have experienced its fascinating effects, can comprehend;—a state of calm and happy excitation, wholly different from the intoxicating operation of alcoholic fluids, and not followed by the nauseating consequences which characterize the abuse of them.† Yet more practically important is the remark that this valuable remedy has been neither so frequently

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* Mr. Bailey, of Harwich, has very ably advocated the claims of Belladonna to the confidence of the profession, in the treatment of tic douloureux. The peculiar circumstances of the disease, calling for its employment, are not, however, always ascertained with sufficient correctness. Upon this precision, its efficacy, like that of every other medicinal agent, must obviously depend. In a case of inflammation of the sciatic nerve, subsequently extending to the spinal chord, the writer has employed it with conspicuous benefit. Great circumspection is required in its use. Patients are sometimes dreadfully alarmed by the confusion of intellect and of vision, which even a small dose has been known to occasion.

† See the celebrated "*Confessions of an Opium-eater*," a work, in the perusal of which, they, who are practically acquainted with the fascinations of the habit, will experience some disappointment.

nor so freely employed in active inflammatory diseases, after requisite depletion by purgatives and the lancet, as the signal benefits, resulting from its exhibition under such circumstances, would seem to indicate. Acids have commonly been resorted to as the most effectual antidote to the poison of opium. It is, however, the opinion of the celebrated Orfila, and experiment appears to have established its correctness, that if administered previously to the expulsion of the poison, they serve only, by acting as a solvent, to aggravate its effects. The opium once expelled from the stomach, the various acids may be then administered with great advantage.

Infusion or smoke of the *Tobacco-leaf* is frequently employed, with success, in the form of injection, against obstinate constipation resulting from hernia, or other obstruction, of the bowels. Fatal consequences have, however, sometimes followed their use even in the hands of professional men.* With empirics, the *Foxglove* is a favourite but most dangerous remedy in dropsical effusions and suspected pregnancy.† Neither of these plants should, conse-

* In the year 1807, a young woman was destroyed by an injection of one drachm of tobacco infused in a pint of water: and, about the same period, a hernia-patient, in one of the London hospitals, fell a victim to the unduly-continued introduction of tobacco-smoke into the rectum. During the operation, which was subsequently performed for the reduction of the strangulated bowel, the man uttered no expression of pain and died shortly after it.

† The symptoms, exhibited by a young woman, who, in 1808, took two large doses of Digitalis-leaf, were violent vomiting, insensibility, dilatation of the pupil, coldness of the extremities; and languor and irregularity of the pulse, which beat from 44 to 48. The green colour of the fluid ejected by vomiting had caused the disease to be considered, at first, as a bilious attack. Ammonia, and other

quently, be administered as medicine, except by the prescription of the regular practitioner. When foxglove is employed to reduce inflammation or dropsy, it should invariably be exhibited in powder or infusion. The tincture is not to be depended on.

Of the different *British Fungi*, which are known, or believed, to produce poisonous effects, when introduced into the human stomach, no correct or systematic description exists within the knowledge of the writer. An outline of the principal virulent and suspected species is, therefore, subjoined. This enumeration is confessedly imperfect. Yet may it not be destitute of utility, until a more full and accurate illustration of these singular productions shall be supplied.*

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stimulants were administered with ultimate success. A state of paralysis, obviously resulting from the operation of the poison on the brain and spinal marrow, yielded, after the lapse of a month, to stimulant and tonic remedies.

* The four following Genera comprehend all the virulent and acrid *Fungi*, indigenous in the British islands, which it will, at present, be necessary to notice. With each species is given a list of works, in which graphic illustrations or correct botanical descriptions of the particular fungus may be consulted.

BOLETUS. 1. *luteus*. Common yellow Boletus. Synonyms: *annularius;—flavus*. Sowerby, plate CCLXV; Greville, C. F. CLXXXIII:—F. E. page 403; Cordier 143:—Abbot, Species, 1068;—Purton, 990.

2. *luridus*. Red-stemmed or Crimson B.—Syn: *rubeolarius*. Sowerby, pl. CCI.; Greville, C. F. CXXI; Letellier, IV, fig. 32:—Greville, F. E. p. 404; Cordier, 133:—Purton, Sp. 985.

MERULIUS. 1. *cantharelloides*. Chanterelle like Merulius. Syn. *M. nigripes; Agaricus cantharelloides*. Sowerby, pl. XLVII:—Cordier, p. 146:—Purton, Sp. 898.

AGARICUS. 1. *stypticus*. Styptic Agaric Sowerby, pl CIX; Orfila, XVIII, fig. 4,—XIX, fig. 2; Letellier, VI, fig. 46:—Cordier, p. 149; Gmelin, 652:—Abbot, Sp. 1053.

2. *torminosus*.———Sowerby, pl. CIII; Letellier, VII, fig 59: Greville, F. E. p. 373. Shewn by Withering to be the *A. piperatus*, of Linnæus.

Meanwhile, the purposes of popular instruction may be served by the following sketch of the ordinary symptoms of poisoning by deleterious fungi; of the morbid appearances induced by their fatal operation on the system; the treatment required to obviate the consequences of their ingestion; and the

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AGARICUS. 3. *piperatus*. Biting A.—Letellier, pl. VI. fig. 51: Greville, F.E. p. 375; Cordier, 157; Gmelin, 645:—Abbot, Sp. 957.

4. *necator*. Deadly A.—Orfila, pl. XIX. fig.3; Cordier, VII, fig. 1; Letellier, VII, fig. 61:—Gmelin, p. 646:—Purton, Sp. 909.

5. *stipitis*. Stump A.—Syn. *annularius;—melleus;—polymyces*. Sowerby, pl. CI; Orfila, XIX?; Letellier, VIII, fig. 70:—Greville, F. E. p. 371; Cordier, 199:—Abbot, Sp. 988.

6. *muscarius*. Fly A.—Syn. *Amanita muscaria*. Sowerby, pl. CCLXXXVI; Greville, C. F. LIV; Orfila, XIV. fig. 1; Letellier, V, fig. 42:—Greville, F. E. p, 369; Cordier, 212; Gmelin, 640:—Abbot, Sp. 983; Purton, 918.

7. *bulbosus*. Bulbous-stemmed A.—Syn. *vernus*. Sowerby, pl. CXXX; Orfila, XIV,—XV; Letellier, V, fig. 41:—Cordier, p. 216; Gmelin, 651:—Purton, Sp. 930.

8. *virosus*. Poisonous A.—Syn. *semi-globatus;—glutinosus*. Sowerby pl. CCXLVIII, CCCCVII—VIII:—Greville, F. E. p. 391 Gmelin, 653:—Abbot, Sp. 1028; Purton 952.

9. *Georgii*. St. George's A.—Sowerby, pl. CCCIV:—Greville, F. E. p. 390:—Purton, Sp. 934.

PHALLUS. 1. *fœtidus*. Stinking Morell.—Syn. *impudicus*. Sowerby, pl. CCCXXIX; Greville, C. F. CCXIII—XIV; Cordier, X. fig. 1:—Greville, F. E. p. 418; Gmelin, 656:—Abbot, Sp. 1106; Purton, 1054.

The 2nd Species of Boletus, and all of Agaricus, here enumerated, excepting 1, 2, and, according to the testimony of Letellier, 5, possess qualities particularly deleterious. The works referred to in the preceding sketch, are Sowerby's *English Fungi*, 3 vols. Folio;—Greville's accurate and beautifully executed *Scottish Cryptogamic Flora*, commenced in 1822, and still continued in monthly numbers; Greville's *Flora Edinensis*, 8vo. 1824; Cordier's *Guide a l'amateur de Champignons*, 12mo. Paris, 1826; Letellier's *Histoire et Description des Champignons alimentaires et veneneux*, 8vo. Paris, 1826; Orfila's *Leçons de Médecine légale*, tom. 3, 8vo. Paris, 1828; Gmelin's *Allgemeine Geschichte der Pflanzengifte*, 8vo. Nurnberg, 1803; Abbot's *Flora Bedfordiensis*, 8vo. 1798; and Purton's *Midland Flora*, vols. 2, 8vo. 1817. Orfila's celebrated *Traité des Poisons*, may also be consulted with advantage, on this subject.

peculiarities of external character and circumstance which may generally suffice to distinguish the acrid or suspicious from the edible species.

The early *Symptoms* of poisoning by fungi are weight and tension of the stomach, slight confusion of ideas, anxiety, nausea, vomiting, and purging. To these, if the noxious substance be not expelled, succeed increased oppression and swelling, heat and excruciating pain, of the abdomen, with intense thirst, and, sometimes, bloody evacuations; disturbed breathing, palpitation of the heart, fainting; and partial or general convulsions. The pulse becomes hard, contracted, small, and frequent. Delirium or insensibility ensues, with cold perspirations: and death takes place amid convulsions or profound stupor. The interval between the ingestion of the poison and the development of the symptoms varies from four to twenty-four hours. They are modified in violence by the particular species of fungus employed.

The *external Morbid Appearances* observed after death, are numerous and extensive violet discolorations of the skin, redness of the membrane of the eye, contraction of the pupil, and swelling of the abdomen. The *internal*,—inflammation, with livid and ulcerated spots, of the mucous membrane of the whole intestinal canal; and sometimes gangrene of a portion of it. The liver, spleen, mesentery, and lungs are gorged with black blood: and spots of inflammation or gangrene observed on their external surface, as in

the brain, gullet, diaphragm, and bladder. The blood is not invariably coagulated; nor extreme flexibility of the limbs, a constant phenomenon.

The *Treatment* consists of emetics combined with active purgatives in draught or injection. Death commonly ensues where the poison has not been completely evacuated. After its expulsion, sulphuric ether may be administered with great benefit. Mild purgatives, and blood-letting general or local, with all the other antiphlogistic remedies, will be required on the occurrence of intestinal inflammation. The debility, consequent on the struggle, will be best removed by wine and tonics.

Acetic acid (vinegar) has been recommended as an antidote to the poison of the fungi. Experiment, however, proves that this fluid, like ether and solution of muriate of soda (common salt) possesses the power of dissolving their active principle, and rendering more deleterious its operation upon animals. Hence, none of them can be beneficially or safely administered until the noxious substance has been wholly expelled from the bowels. Ether is then entitled to the preference. Oil, butter, and milk, have been found useless; the various preparations of ammonia detrimental, in this description of accident.

In addition to the notoriously virulent species, all fungi should be *rejected as suspicious*, which grow in damp and shady situations; present a soft and porous structure; or contain much moisture:—which have bulbous stems, like the *Agaricus bulbosus*; or frag-

ments of membrane adhering to their surface:—which burst from an envelope, or exhale an offensive odour, like the *Phallus fœtidus:*—which, like the *Amanita muscaria,* exhibit splendid colours:—which spring up and decay with uncommon rapidity; or have been bitten, and subsequently abandoned, by insects. Many fungi retain, in drying, their acrid or deleterious properties. Those species, which have an agreeable taste and odour, may be, in general, regarded as salutary.

In the intestinal canal of persons destroyed by animal or vegetable poisons, it is far more difficult to detect their presence and to ascertain the precise nature of the agent, than when mineral substances have been swallowed. In the former instances, with the exception of the prussic and oxalic acids, chemistry affords neither test nor means of decomposition. Prompt evacuation of the deleterious substance by emetic or the stomach-pump* consequently forms the most effective treatment. It should, however, be recollected that on the brain and nervous

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* Several gentlemen in England lay claim to the honour of inventing this valuable instrument. Justice requires an exposure of the utter emptiness of all these pretensions. The stomach-pump is not an English invention. This assertion will be incontestably proved by the following extract from the article *Arsenic*, in the second volume of the *Dictionaire des sciences médicales*, published at Paris, in 1812: "M. M. Renault et Dupuytren proposent d'avoir recours à une sonde de gomme elastique assez longue pour pouvoir descendre dans l'estomac: on adapte à l'orifice de cette sonde une seringue à l'aide de laquelle on injecte une assez grande quantité de liquide que l'ont peut ensuite aspirer et évacuer par le moyen du piston." Two years previously to this period, a description of the instrument had been given, by M. Felix Cadet, in the *Bulletin de Pharmacie.*

system, the vegetable poisons most powerfully exert their consecutive influence; and that the derangement, thus excited, may assume such a formidable character, or so perfectly survive the expulsion of the poison from the stomach, as to menace or destroy life, and require treatment directly applied to the source of mischief established in the remote organ.

There are two other substances, which, although existing copiously in plants, are known to possess a metallic basis; and, consequently, will not admit of arrangement among the vegetable poisons; and a third, which, from analogy, may be referred to a metallic origin. These are the alkalis, *Potash*, *Soda* and *Ammonia*, in various states of chemical combination. The two former are obtained from plants by the process of combustion. The latter is copiously evolved from animal substances, in a gaseous form, during their decomposition; and is found naturally combined with muriatic acid. They all, particularly in their pure state, possess highly caustic properties, and destroy with rapidity every animal substance with which they come in contact. Their effect on the delicate membrane of the intestinal canal, when they have been introduced without dilution or in excess, may hence be readily inferred.* Fortunately,

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* An elderly man drank, by mistake, part of a wine-glassful of concentrated solution of pure potash; but had the presence of mind instantly to dilute it by drinking a considerable quantity of water. The symptoms which ensued, were those of violent inflammation of the membrane of the mouth, throat, and gullet.

however, little known or employed, these poisons are seldom the subject of medical observation. They are readily neutralized or decomposed by the various acids. Consequently, their operation on the human stomach, after all the requisite measures for their prompt expulsion or dilution have been resorted to, will be most effectually counteracted by the free administration of diluted acetic acid,—common vinegar and water.

The *Mineral Poisons*, most ready of access, are the various preparations of Arsenic, Mercury, Silver, Copper, Lead, and the Sulphuric, Nitric, and Muriatic Acids. Into the chemical history, and physiological operation of these different substances, it would be inconsistent with the objects of a popular essay to enter diffusely. The mineral poisons almost invariably operate by exciting irritation and inflammation of the mucous membrane of the intestinal canal. The most obvious and efficient practice is, therefore, the prompt removal of the poison from the stomach; and the prevention or mitigation of its injurious consequences by blood-letting, hot fomentations, copious administration of mucilaginous and diluent liquids; and by the use of such other remedies as are best calculated to allay irritation

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A profuse secretion of fluid took place from the inflamed surfaces; and the patient recovered. Intestinal evacuants, local blood-letting, and an acidulous beverage, were the remedies employed. Such, however, was the shock sustained by the stomach that, after a lapse of six years, the organ cannot yet, with comfort, digest solid animal food.

and avert the development of the inflammatory process.

Much, indeed, has been plausibly written upon the practicability of decomposing, by chemical agents, the various mineral poisons when introduced into the human stomach. Reflection will, however, expose several formidable objections to the indiscriminate adoption of this specious practice. The precise nature of the poison to be operated upon is frequently unknown. The substance employed to effect decomposition, even if the requisite knowledge have been acquired, may possess such properties as to aggravate the irritation already existing: and, should decomposition be really effected, the resulting compound may prove little less noxious than the original poison. Hence, no specific antidote should be administered, except by practitioners who are well-versed in the chemistry of mineral poisons; and not even by them, unless the particular nature of the poisonous substance to be decomposed, have been satisfactorily ascertained.

For a description of the physical and chemical characters of the different Intestinal Poisons, and the means of detecting the presence of those which belong to the mineral kingdom, in the fluid ejected from the stomach, in its contents, or in combination with the structure of the organ itself,—the external phenomena to which they give rise,—their peculiar operation on the animal economy, and the treatment which they require,—the reader is referred to those

authors who have written expressly on the subject.* It may yet be right to remark that in cases, where death has ensued from the action of a metallic poison, the recovery of the poison itself in a metallic form is the only circumstance upon which an opinion, respecting the cause of the fatal event, can be confidently founded. The value of this unerring test will be more deeply felt and appreciated when it is remembered that the character and life of a human being are frequently implicated in the decision†.

Extraneous Bodies, wantonly or accidentally introduced into the human stomach, are more various in their nature than in the effects which they produce

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* Some valuable works on *Toxicology*, or the Doctrine of Poisons, have, within the last few years, appeared in the French and German languages. Of these, the *Traité des Poisons*, of Orfila is incomparably the best. The French writer has, however, obviously availed himself, without allusion or acknowledgment, of the elaborate productions of his predecessor Gmelin: *Allgemeine Geschichte der Pflangengifte;* and *Allgemeine Geschichte der thierischen und mineralischen Gifte*, 1803 and 1811. To the English reader the translations of Orfila offer the most authentic sources of information. The medical student will find the *Toxicological Chart*, constructed from the work of this distinguished foreigner, a valuable acquisition. The subject of the different Poisons is discussed, with various degrees of talent and minuteness, in the well-known writings of Drs. Male, Gordon Smith, Paris, and Beck. The work, which concludes this list, is an admirable production; and should be possessed by all those who are interested in acquiring a knowledge of the principles or practice of Medical Jurisprudence. A new edition of it, revised by Dr. Darwall, of Birmingham, and enriched by his observations, is on the eve of publication.

† The process, recommended by Orfila for this purpose, consists in drying portions of the intestinal canal which have been preserved in alcohol; mixing them with potash; and submitting them to calcination. The practicability of discovering quicksilver or arsenic in combination with the animal textures has been shewn by conclusive experiment. After all, it is frequently impossible to detect the presence of the latter poison in the stomach of persons who have been unquestionably destroyed by it.

upon the intestinal canal. These different bodies will admit of a convenient division into such as by asperity of surface or outline, or acuteness of point, are calculated to wound or perforate the membranes of the gullet or stomach; and such as, possessing smoothness and rotundity of figure, merely operate by their bulk in exciting irritation, and obstructing the introduction of food into the intestinal canal, or its passage through.—These again, from their peculiar constitution, are susceptible either of being dissolved by the intestinal fluids, or not. Of the former, some, when thus acted upon, as bone, gum, and other animal or vegetable substances, are perfectly innoxious: while others may be productive, independently on the mechanical irritation which they excite, of unpleasant or dangerous consequences. Several of the metallic substances, particularly copper, lead, and zinc, may be enumerated as correctly elucidating this observation.

Any of these bodies, if they have not passed down the gullet to a distance beyond the reach of a surgical operation, may, in general, be extracted. Frequently, however, in this case, the effects resulting from the injury which has been inflicted by the presence of the foreign body, especially when aggravated by the violence inseparable from the operation, may be so protracted or severe as to require the interference of art for their suppression.* Blood-letting,

* See Monro's *Morbid Anatomy of the Human Gullet, Stomach, and Intestines*. Chapter II.; and an interesting *Case of Fatal Abscess of the Neck, in*

intestinal evacuants, abstinence from solid food, and the administration of diluent remedies, will then constitute the plan of treatment. And the same practice will obviously be indicated to subdue irritation resulting from the presence of the foreign substance in the gullet, when, from farther descent, its removal is no longer practicable.—If the extraneous body consist of any of the metals previously specified, it will be highly important to prohibit the medicinal or dietetic employment of acids themselves, and of those fluids which are known to favour the process of acetous fermentation in the stomach. For by neglect of such precaution, the metal, in its natural state perfectly inert, might be oxidated;* and a specific and more active character be imparted to an agent, which otherwise would have exerted a merely mechanical operation upon the animal economy.

The violence which may be inflicted upon the stomach without inducing formidable or promptly fatal consequences, is sometimes such as almost to surpass the limit of credibility. The perforation of the coats of this organ by pointed substances, as needles or the bones of small animals incautiously introduced into it; the circuitous course they sometimes take through the body; and their ultimate

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consequence of a bone being swallowed;" given in the *Lancet*, vol. II. p. 393, from the *Archives Générales de Médecine*, Mai, 1828.

* Opinions as extraordinary as incorrect and dangerous have been advanced on this subject, with respect to the Poison of *Lead*, by Dr. Latham. See *Medical Transactions*, vol. V, p. 341; and *Medico-Chirurgical Journal*, vol. II. p. 324.

escape at the most remote points of the surface, constitute a series of phenomena, the possibility of which, without re-iterated proof of their occurrence, the theorist would, perhaps, be tempted to deny. The history of the knife-eater who died, several years since, in Guy's hospital,* and the cruel experiment of pouring melted lead into the stomach of animals with apparent impunity, may be cited as familiar illustrations of this extraordinary resistance of the stomach to mechanical and chemical injuries.

The *Extraneous Bodies* which may be *accidentally developed*, or *generated*, in the alimentary canal, are Intestinal Concretions; and Intestinal Worms. The former, as being the result of some defect or irregularity previously existing in the intestinal functions, may not be correctly admissible into an enumeration of the exciting causes of disease. Yet as a source of intestinal irritation, less frequently suspected than occurring, a brief notice of these curious substances may, without any grave violation of the principles of arrangement, be introduced here.

Intestinal Concretions are substances, of various size and figure, which sometimes form in the intestinal canal. In external character and chemical con-

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* See the case of this infatuated man, published by Dr. Marcet, in the 12th volume of the *Medico-chirurgical Transactions;* and one yet more extraordinary, of a voracious lunatic, narrated, under the article, *Cas Rares*, in the 4th vol. of the *Dictionaire des Sciences Médicales*. An abstract of this almost incredible case is given in the 10th vol. of the *New Medical and Physical Journal*, page 111.

stitution, they vary considerably. They consist of numerous strata deposited round a central point; and this nucleus is frequently a fragment of bone or other strange body accidentally introduced from without. The commencement of the large intestine most commonly forms their receptacle. In the lapse of years, they usually attain a large volume; and, like other foreign bodies, excite pain, irritation and obstruction, proportioned to the irregularity of their surface and their bulk. To accurately discriminate them in the living subject from other tumours developed in the membrane of the bowels, or contained within their cavity, is a point of extreme difficulty:* and the medical treatment, even when their peculiar character has been satisfactorily ascertained, altogether destitute of fixed principles, and hopeless.

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* In proof of the obscurity of the diagnosis in these cases, the following facts may be recorded. A middle-aged female requested the opinion of the writer respecting a tumour existing in the hollow of the right flank. It was well defined, globular, hard, moveable, and apparently of the volume of a common orange. Within the last few months, it had rapidly increased in size. From the history and circumstances of the case, it might be fairly inferred that the tumour consisted of an intestinal concretion, lodged in the head of the colon. To remove the indigestion and costiveness of which the patient complained, aloes and the solution of pure potash were prescribed. Under this simple treatment, the substance, in a few weeks, wholly disappeared without the occurrence of any evacuation capable of explaining the curious phenomenon: and thus was fortunately disproved the correctness of the opinion which had been formed respecting its nature. Some years ago, a tumour, adhering to the inferior surface of the liver, was discovered on opening the abdomen of a person, who had submitted to the operation for the removal of a supposed intestinal concretion; and, in another case, where an operation had been proposed with the same view, a scirrhus of the lower orifice of the stomach was alone found, after death.—See *Edinburgh Medical and Surgical Journal.* Vol. IX. page 112.

While yet small, these concretions give rise to no symptoms which would inspire a suspicion of their existence: and when they have acquired such a volume as to attract notice, a surgical operation, equally perilous and uncertain, is the only remedy which can be proposed with the slightest prospect of permanent relief.*

Magnesia, when long and largely taken internally for the cure of acidity in the stomach or of urinary complaints, is said to accumulate, after a time, in the bowels, and form an adherent mass; which, with somewhat of the characters of an intestinal concretion, may ultimately acquire its formidable power of producing intestinal irritation or obstruction. This fact, it is important that the habitual consumer of Magnesia should bear steadily in mind. The mischief may be averted by the occasional discontinuance of the favourite remedy; and after the employment of a smart purgative, by the regular exhibition, for a few days, of the sulphuric acid or its compounds.—Thus the bowels will be effectually cleared from the su-

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* On the subject of Intestinal Concretions, see Monro's *Morbid Anatomy*, p. 25; and an interesting Case, with a concise but luminous "Historical Sketch" of these singular productions, in the 3d vol. of the *Medico-Chirurgical Journal*. By Dr. James Kennedy. A gall-stone lodging in the bowels, has sometimes been known to form the nucleus of an intestinal concretion: and biliary calculi themselves occasionally attain such a volume as to produce all the mechanical effects of an intestinal concretion after their escape from the gall-bladder. See *Medico-Chirurgical Transactions*, vol. VI. p. 98; and vol. XII. p. 255. The horse and cow suffer more frequently than man, from "Stone in the bowels."

perfluous earthy substance; and all possibility of dangerous accumulation be at once obviated*

The *Intestinal Worms* which most commonly infest the human subject, and become the source of intestinal irritation and general disease, are of five distinct species. Of these, two belong to the Genus *Ascaris;* one, to the Genus *Tricocephalus;* and two, to the Genus *Tænia.* The three former species are included, by popular writers, under the general designation of round worm; the two latter, under that of the flat or tape-worm. A description of their generic and specific characters, or of the peculiarities of anatomical structure by which they are distinguished, would be irrelevant here.

The *Ascaris lumbricoides,* or large round worm, must be known to the most negligent observer. By the older naturalists, it was erroneously considered as identical with the common earth-worm. More correct observation has subsequently established such differences of structure as remove them very far asunder in systematic arrangements. Its ordinary habitation is the small intestine. It varies in length from five to fifteen inches.

Equally common is the *Ascaris vermicularis,*— the thread or maw-worm. It resides generally in the rectum; but sometimes ascends into the co-

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* See a communication "*On the Bad Effects of the Incautious Use of Magnesia.*" By E. Brande, Esq, in the 1st vol. of the *Quarterly Journal of Science and the Arts.*

lon, or even the stomach: and hence it has vulgarly received the latter designation. Its length is little more than half an inch.

The *Tricocephalus hominis,—dispar*, the long thread worm, formerly called, from an erroneous view of its structure, the Trichuris, and incorrectly arranged under the genus Ascaris, is, like the two preceding species, round, and somewhat resembles in figure the last; but it is at least four times the length; and distinguished from that by its hair-like anterior extremity. It inhabits the large intestine; and is of rare occurrence.

Both species of the Genus *Tænia* are flat; and hence derive their popular name of *Tape-worm*. They consist of a head, and neck and body composed of numerous joints or articulations.* They sometimes attain an almost incredible length. The *Tænia lata, —vulgaris,*—or *inermis*, may be readily distinguished, by its plain anterior extremity, and broader and shorter articulations, from the *T. solium,*—or *armata;* which exhibits a head curiously armed and constructed, and more long and slender joints. The

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* Professor Blumenbach asserts that the *Tænia cucurbitina*, described by Rudolphi and other naturalists as a distinct species, consists only of the "detached posterior joints" of the *T. Solium*. See the Professor's *Handbuch der Naturgeschichte;* or Mr. Gore's excellent *Translation* of that valuable work. Some descrepancy exists between various writers respecting the Synonyms of the intestinal worms; and confusion has been the result. To rectify this, a *Tabular View*, with a reference to the engravings and descriptions of the best Authors, who have treated on these animals, will be given at the close of the volume.

small intestine constitutes the residence of both species.

Respecting the mode of introduction of these animals into the human intestines, no certain knowledge has yet been acquired. That they effect their entrance in the shape of ova, accidentally mixed up with alimentary substances, has long been received as the most plausible opinion. This hypothesis is, however, in many points, defective; and leaves utterly unexplained the presence of parasytic animals in other organs and cavities of the system, completely out of the intestinal track, and apparently inacessible from it. And if, as is confidently affirmed, worms have been found in the intestinal canal of the new-born infant, such hypothesis must obviously be abandoned as inadequate to the explanation of this curious phenomenon; and the fact be added to the accumulated mass of those mysteries which the human mind is not allowed to penetrate.

As the various species of worm, just enumerated, appear formed to exist only in the intestines of man and of some of the more perfect of the lower animals, it is reasonable to conclude that they prevail much more generally than has been suspected. Few persons, in fact, escape, at one or other period of life, the visitation of worms. And it has been thought that their existence in limited numbers may be, to otherwise healthy subjects, not only innoxious, but productive of salutary irritation. During the operation of active purgatives, or the invasions of disease

utterly unconnected with the irritation of worms, these animals have been voided, in considerable quantities, by individuals who had previously experienced none of the peculiar symptoms or sufferings, which, under less favourable circumstances, characterize their presence in the intestinal canal.

When, however, by improper diet, the influence of the depressing passions, previous disease, or other debilitating causes, the powers of the system have been reduced, and the system itself thus rendered more susceptible of morbid action, worms, especially if existing in great numbers, become a fruitful source of intestinal irritation, and of obstinate, distressing, and even fatal symptoms. Children and individuals of delicate constitution and loose fibre are peculiarly predisposed to suffer from these affections. The large round, and the thread-worm are more commonly met with in infancy and youth. The Trichocephalus is an occasional attendant on nervous fever and other derangements signalized by great prostration of the vital powers: and adult age is particularly liable to the invasions of the Tæniæ.

To recite all the numerous and discordant symptoms which have been described by authors, as characteristic of the presence of worms in the intestinal canal, would be tedious and unprofitable. An enumeration of the more prominent and invariable will suffice. These symptoms consist of the internal sensations experienced by the patient himself, which may be arranged under three heads,—the local, the sympa-

thetic, and constitutional;—and of the visible or appreciable effects by which they are accompanied. The latter constitute the external phenomena by which the observer is enabled to recognize the existence of worms in the human intestines. They will admit of the same distribution as the former.

The *Local Sensations,* which result from worms, are direct consequences of the injury inflicted upon the delicate and highly sensitive intestinal membrane, or of the motions or mechanical pressure of the animals themselves. These are, transient and wandering pains in the belly, frequently compared to a pinch or a leech-bite, aggravated by emptiness of the stomach, and relieved by ingestion of food; griping, irregularity, sense of soreness and distension of the bowels;—of weight and coldness about the navel; and involuntary twitching of the adjacent muscles.

The *Sympathetic Sensations* vary in character according to the organ which directly suffers from the extension of the irritative action. If the rectum be principally affected, pain and tumefaction of the anus, and frequent but unavailing inclination to void excrement, are experienced. Urgent thirst, impaired or voracious appetite, hiccup, flatulence, nausea, vomiting, copious secretion of fetid saliva, and intolerable itching of the nostrils, characterize the implication of the stomach and higher portion of the alimentary tube. When the brain and spinal marrow suffer from the irritation, head-ach which, when complica-

ted with general re-action of the system, amounts to delirium,—giddiness, noise in the ears, anxiety, depression, disturbed sleep, and involuntary startings, constitute the signs of the peculiar sympathy. Faintness, palpitation, and disordered breathing announce the consecutive affection of the heart and lungs,

The only or principal *Constitutional Sensation*, commonly complained of, is a feeling of general weakness and depression, obviously explicable by the disordered state of the intestinal functions; and consequent inaptitude for all physical and intellectual exertion.

The *Appreciable Effects* or *External Phenomena*, resulting from the irritation of worms, may thus be enumerated in the order of the preceding arrangement: an unnatural and offensive state of the intestinal evacuations; tumefaction of the bowels:—Grinding of the teeth; excessive dilatation or contraction of the pupil of the eye; partial or general convulsions; delirium, fever; quick, frequent, hard, or intermittent pulse; difficult or hurried respiration; dry, convulsive, sonorous cough.—Progressive wasting of the body from defective nutrition; paleness, an irregular flushing, or lividity, of the countenance; absence of the wonted lustre of the eye; the appearance of a dark circle beneath it, and tumefaction of the lower eyelid,—such are the local and secondary phenomena, which, existing in various grades and combinations, afford an indication, more or less certain, of the existence of intestinal worms.

All these sensations and signs, however, are seldom united in an individual case. It will commonly be sufficient for the formation of a correct diagnosis that many of the most constant and strongly-marked exist at the same time. Yet, it should be remembered that the actual expulsion of a worm from the bowels, constitutes the only infallible proof of its presence. All the symptoms commonly attributed to it, may result from other irritations of the intestinal canal or of a remote organ, utterly unconnected with the existence of worms. Thus, the violent itching of the nose and anus, which is thought more particularly to indicate the presence of the *Ascaris vermicularis;* and the pinching and puncture-like pains usually inflicted by the larger species of worm, and especially by the *Tænia Solium,* may be consequent on intestinal irritation from undigested aliment or other source; and be removed by a well-directed course of purgative medicines. And the nervous symptoms, commonly referred, without hesitation, to the same cause, may arise from irregular distribution of blood to the brain; and require for their dispersion, topical abstraction of blood and blistering:*

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* A married woman, aged 34, suffered severely from disorder of the bowels, with extreme irritability and depression of mind. She was fully prepossessed with an opinion that she was "eaten up by worms." Great irritation existed at both extremities of the intestinal canal; but no worm had ever been voided. Her medical attendant was sceptical as to the existence of these animals; and tried all the ordinary remedies for intestinal derangement without success. An eminent physician was then consulted. Concurring in the patient's opinions, he prescribed

while the general weakness and emaciation which, without other evident source, favours the suspicion of verminous irritation, may depend upon obscure and ill-defined constitutional derangement; and yield to remedies of an alterative and invigorating character.

To the *Morbid Alterations of Structure* occasionally induced by the irritation of worms, it will not, in this place, be requisite largely to advert. For, although cases are upon record wherein worms have been known to perforate the membranes of the bowels, and thus to escape into the cavity of the abdomen, or be discharged externally by abscess;* yet such instances are obviously of rare occurrence. Nor does it

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various drastic purgatives, and spirit of turpentine, in full doses: no evidence of worms was, however, obtained. A state of mind, bordering upon mania, now shewed itself; attended with symptoms of high cerebral congestion. The head was hot; the pulsation of the carotid arteries violent. Removal of the hair, application of leeches to the temples, and of a blister between the shoulder-blades, were consequently directed: aloetic aperients and aromatic spirit of ammonia given internally. Under this treatment, all the symptoms, cerebral and intestinal, gradually subsided; and the woman's health was restored, without the expulsion of any worm.

* See an instance detailed in the *Medical Gazette*, vol. I. p. 22, from the *Diario General de las Ciencias Medicas;* Mr. Kell's instructive "Case of Perforation of the Intestines by a Worm." *Medical Gazette*, vol. II. p. 649; and another, by Mr. Dix, *Same Work* and vol. p. 45. See also some valuable "Cases in which Lumbrici were evacuated by Ulceration through the Parietes of the Abdomen;" published by Dr. Young, in the *Glasgow Medical Journal.* His three cases are luminously narrated; and the two last, in which the patients died of intestinal hemorrhage resulting from ulceration determined by the worms, remarkably interesting. From the designation, *Lumbricus*, negligently retained by these gentlemen, in their narrations, the uninformed reader might be led to confound the animals which they have described, with the *Lumbricus terrester* or common earth-worm.

appear that the injury inflicted by them upon the mucous coat is usually so great as to induce inflammation or any of the various morbid consequences which result from that process. Ordinarily, when dangerous or fatal symptoms arise in worm cases, the sympathetic irritation propagated from the bowels to the brain, and terminating in serous effusion and convulsions,—or the constitutional effects arising from the derangement of the digestive process and defective nutrition,—may be regarded as the immediate source of mischief. The former of these conditions is much more common of occurrence, rapid in progress, and fatal in result, than the latter: and hence claims the most earnest and sedulous attention. For unless great vigilance of observation and decision in practice be employed, the secondary affection will often suddenly destroy life, while the views and efforts of the physician are exclusively directed to the original seat of diseased action. And, in all cases, the sympathetic disturbance of the brain, when established, even if it acquire not a formidable or fatal ascendancy, will invariably aggravate the violence and obstinacy of the intestinal irritation. The co-incidence of these facts with the principles developed in the present essay, and their practical importance, are too striking to require farther illustration.

From a retrospect of the causes which favour the development of worms in the human system, and of the physical condition of those who most commonly

exhibit the injurious effects of their presence, the general treatment of the diseases connected with them, will be readily inferred. These causes and conditions are principally, crude, or acescent and innutritious aliment,—as green vegetables, unripe fruits, and substances containing a large proportion of saccharine matter; want of exercise; the depressing passions and every agent by which the energy of the whole system, and especially of the intestinal canal, may be impaired; and original delicacy of constitution. Hence plainly-dressed animal substances with a large admixture of common salt,* sound bread with a regulated allowance of good malt-liquor or wine, active exercise, the shower-bath,

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* Common salt is one of the most safe, powerful, and unerring remedies for intestinal worms. Hence the popular but disgusting practice of obliging children infested by them, to swallow raw bacon.—Employed in the form of glyster, salt will, with great certainty, destroy the thread-worm. The following case attests the efficacy of it, employed in large doses, against the Tænia.

A middle-aged farmer, wearing an aspect of the most robust health, complained of incessant restlessness and depression of mind, with a sense of "nipping about the navel." No external sign of disease existed. He believed himself to be suffering from "ulcer of the bowels." The irritation of worms being suspected, Calomel, Aloes, Colocynth, Gamboge, and Scammony, were repeatedly prescribed by the writer, without success. Spirit of turpentine, administered in three-ounce doses, was equally unavailing. Congestion of the brain with alarming wildness of look and extravagance of conduct, resulted from its use; and it was consequently abandoned, Half an ounce of salt, dissolved in warm gruel, was now taken every morning. On the second day of its employment, more than fifty ova of the Tænia were voided by stool. For several weeks afterwards, three or four eggs were occasionally discharged, and sometimes, detached portions of the worm itself. Perseverance in the salt, aloetic purgatives, iron, the cold bath and animal diet, completed the recovery: and, seven years subsequently, the disease had not recurred.

drastic purgatives, and the vegetable or mineral tonics, will constitute the plan of treatment most effectual, as well for expulsion of worms from the intestinal canal, as for the removal of that condition of the system which may favour their future development.

Whenever the consecutive affections of the brain or other organ acquire, in these cases, such ascendancy as to re-act upon the original source of irritation, or to constitute an independent focus of diseased action,—such affection will obviously require for its removal, treatment adapted to the peculiar character of the organ in question, and modified by by an undeviating regard to the original seat of the disorder.*

Of the introduction of Lizards, Snakes, and other individuals of the Amphibious Class of Animals, into the human intestines, and their subsequent expulsion

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* For a description of the anatomical structure of the different intestinal worms; or the peculiar symptoms which denote the presence of the individual species in the human intestines; and the treatment which they respectively require,—any of the following works may be consulted: Joerdens, *Entomologie und Helminthologie des Menschlichen Koerpers*, 2 vols. 4to. with plates. Hof. 1801-2:—Rudolphi. *Entozoorum sive Vermium Intestinalium Historia Naturalis*, 2 vols. 8vo. Amst. 1808;—Bremser, *Ueber lebende Würmer in lebenden Menschen.* 4to. Wien. 1819;—Cloquet, *Anatomie des Vers Intestinaux*, 4to. with plates, Paris, 1824;—and Brera, *Lezioni Medico-Pratiche sopra i principali Vermi del Corpo umano vivente*, 4to. with plates. Crema, 1802.—The elaborate work of Joerdens is stigmatized by Rudolphi as inaccurate. That of the Italian professor is a most luminous, correct, and classical production. England is sadly deficient in monographs on this subject. The only one, deserving of notice, is Mr. Rhind's recently published *Treatise on the Nature and Cure of Intestinal Worms*, 8vo. London, 1829.

in a living state, the records of medicine exhibit numerous examples. Some of them are respectably attested.* These histories, however, like all other apparent deviations from the ordinary course of nature, should be viewed with extreme jealousy and circumspection. In such a case, precise knowledge of the particular species of animal swallowed would be productive of little practical advantage: for the symptoms would nearly resemble, and require the same treatment as, those of intestinal irritation resulting from the introduction of other living animal bodies. Hence a particular consideration of this rare event is obviously unnecessary.

With the difficulties and dangers frequently attendant upon the process of *Early Dentition*, every observer of the diseases of childhood must be sufficiently acquainted. Intestinal irritation and derangement constitute its most invariable and prominent

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* See a case recorded by Dr. Spence in the 9th vol. of the *Edinburgh Medical and Surgical Journal*. The doctor, however, did not, himself, see the supposed "*Lacerta:*" and there are several other circumstances which throw great suspicion on the evidence of the two ignorant and terrified witnesses. The fact of the introduction of a Leech into the throat, subsequently mentioned by Dr. Spence, is not singular. Among the French troops, during their campaign in Egypt, it was a frequent source of distressing irritation or fatal hemorrhage. See Larrey's *Mémoires de Chirurgie Militaire*, vol. I. p. 359; Mr. Waller's *Translation* of that work; or Dr. Rawlins Johnson's accurate and interesting *Treatise on the Medicinal Leech*, First Edition, p. 12. Insects, in their various states of Larva, Pupa, and Imago, have also undoubtedly been discharged, and sometimes in prodigious numbers, from the intestinal canal. Even the *Lumbricus terrester*, and animals of the Mollusca Class,—as the *Limax*,—are said to have been expelled from the human bowels, in a living state—See Mr. Rhind's *Treatise*, p. 137; and different vols. of the *Edinburgh Journal*.

symptoms. The mode, however, by which, in these cases, the irritation is propagated from the tumid and inflamed gum to the intestinal canal, is not quite so clearly ascertained. Readily as the question will be disposed of by the advocates of the intestinal doctrine, some diversity of opinion respecting it may still lurk in the unprejudiced mind. It seems to be a notion, as commonly as implicitly received, that, in the derangement of the bowels arising from dentition, the morbid action is directly transmitted, by continuous sympathy, from the mouth to the organs more immediately concerned in digestion. But when it is shewn that the majority of children, who die during painful dentition, are destroyed by irritative or inflammatory action of the vessels of the brain, and its consequences,—extravasation of serum and convulsions ;—when the almost invariable existence of the signs of the cerebral affection, and the prompt alleviation of the intestinal disorder by remedies directly applied to,—or discharges spontaneously occurring from,—the vicinity of the brain, are moreover recollected,—the infallibility of the common opinion may be fairly questioned. On the application of a few leeches to the temples,—of a blister to the nape of the neck, or on the occurrence of a spontaneous or artificial discharge behind the ear, the most violent and distressing symptoms of intestinal irritation connected with teething, have sometimes been known almost instantaneously to subside. How far the treatment of the diseases of dentition may be

beneficially influenced by the hint here cursorily thrown out; and the principle from which it emanates, will confirm, and harmonize with, those previously developed, future observation and experience can alone unerringly decide.

A popular prejudice has long and very generally prevailed against the practice of cutting down upon the tooth through the inflamed gum, in cases of slow or painful dentition, with a view of allaying irritation, and accelerating the completion of the process. This objection may commonly be traced to some vague or exaggerated apprehension of pain or danger attendant upon the incision, or to a belief that, if the tooth do not immediately afterwards penetrate the gum; and the wound consequently heal, its future passage will be retarded, rather than facilitated, by the unyielding nature of the cicatrix. These impressions are erroneous. Although trivial in themselves, yet, as sometimes exerting an important influence on the welfare and even life of a suffering child, the incorrectness of such notions cannot be too widely promulgated. The flow of blood from the hot and distended gum is almost invariably productive of immediate relief: and, even should the wound again close, it will, by a well-known law of the animal economy,* yield more readily, on a fu-

* See Fox on *The Natural History of the Human Teeth*, p. 86,—It is a remarkable fact that all new formations are more readily taken up by the absorbent vessels, than substances constituting an original part, of the human body. This is an important principle, as illustrative of the phenomena, and applicable to the

ture occasion, to the pressure of the emerging tooth, than if no such incision had been made. In all cases, therefore, where irritation from this source is even suspected to exist, the precaution of lancing the gums should, on no account, be neglected. The operation, adroitly performed, is not painful; and will generally prove as beneficial as it is simple. It will relieve pain and irritation; and, under all circumstances, expedite the liberation of the tooth.—These truths once distinctly comprehended, its adoption will become as general, as its reprobation has been unmerited, and its neglect injurious.

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treatment, of several diseases. In the voyage of Lord Anson round the world, when scurvy was committing dreadful ravages among his crew, sores which had been healed for years, broke out afresh; and bones, long previously fractured and united, became again disjoined, from absorption of the callus. The successful treatment of internal aneurism by blood-letting and extreme abstinence, first practised by Valsalva, and recommended by Mr. Hodgson (See his valuable *Treatise on Diseases of the Arteries and Veins*, p. 150) is perhaps, attributable, in some degree, to the operation of this salutary law of the animal economy. On the same principle is also obviously founded the practice, eulogized by Dr. Pons, as eminently successful, of treating cancerous tumours by local blood-letting and the exclusive employment of solution of Gum-Arabic for the diet. See *Journal Universel des Sciences Médicales.* Tom. XXI. p. 92.

CHAPTER VII.

OF RESPIRATORY AGENTS,—CONSIDERED AS THE EXCITING CAUSES OF DISEASE.

The agents which destroy life, or derange the health, through the medium of respiration, are certain kinds of gas existing in nature, or resulting from a chemical process;—and noxious effluvia emanating from different bodies or sources, vegetable, animal, and mineral, and consisting of particles of matter diffused, in inconceivably minute division, through the atmosphere. All these various agents are introduced into the system through the respiratory passages; and exert their influence upon it either by the lungs or the olfactory organ.—They may be more conveniently than correctly arranged under the respective heads of Gaseous and Aëriform Agents. The term, *Aërial*, will be employed to comprehend both.

The *First Division* will include the strictly gaseous fluids unfit for human respiration. They operate directly, through the respiratory membrane, upon the blood contained in the vessels of the lungs; and thus induce derangement and actual or apparent death by their secondary influence on the heart or brain, or both.

Under the *Second*, or *Aëriform*, will be ranged the effluvia of vegetable substances in the diverse states of freshness, desiccation, combustion, and decay;—the

emanations arising from animal bodies in health, during the prevalence of specific diseases, and the process of decomposition after death;—and, lastly, metallic vapours. The exhalations from all these sources operate directly, and, with few exceptions exclusively, upon the brain and nervous system, by application to that portion of membrane upon which the ramifications of the olfactory nerve are distributed; and thus produce their baneful or deleterious consequences. Some of them excite pulmonary disease.

There, again, exists in the mode of operation of the Aërial Poisons, a diversity not less striking in a physiological, than important in a practical view. The effects of some, where they have not been inhaled to a fatal extent, soon subside on the removal of the exciting cause; and leave behind, no lasting traces of their influence. By others, on the contrary, when their impression has been made on the brain, a series of morbid phenomena is commonly set up, which will survive the original cause, and run a stated progress: and a poison will be generated, capable, under certain circumstances, of communicating to other individuals a disease of identical character, with the same infectious properties.

Some other agents may yet be enumerated which exert a prejudicial effect on the system through the medium of the lungs; and still, as possessing no strictly aërial character, admit not of correct arrangement in either of the preceding sections. These are diverse vegetable and mineral substances, in a state

of mechanical division, suspended by the atmosphere. In flour-mills, cotton-mills, malt-houses,—the work-shops of grinders, stone-masons, and persons employed in manual processes on the various metals,—minute particles are incessantly detached from the substances operated upon; and dispersed, by the atmosphere, through the interior of the building. These particles, in the form of an almost invisible dust, are inhaled in respiration by the inmates; and produce, in the uninitiated, distressing signs of irritation: and although, after a while, by force of habit, an apparent insensibility to it may be acquired; yet by this cause an insidious state of excitement will often be engendered and kept up in the mucous membrane of the windpipe and lungs, which may eventually induce, in subjects predisposed to it, asthma, pulmonary consumption or other disease connected with morbid alteration of this membrane.* The mischief will obviously be aggravated if the atmosphere is loaded with metallic particles: for then a specific will usually be added to the mechanical irritation.

In discussing the operation of the grosser stimulants on the membrane of the olfactory organ and lungs, an opportunity presents itself of adverting to

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* Hence the unpleasant pulmonary irritation experienced by foreigners on first respiring an atmosphere loaded with the carbonaceous particles and other impurities which are constantly issuing from the open coal-fires of England. To such cause some writers have ascribed the prevalence of consumption and other diseases of the pulmonary organs, in this country.

the habitual employment of *Snuff;* which must not pass unimproved. The early or excessive indulgence in this uncleanly and encroaching habit cannot be too strongly denounced. Few dispassionate men will probably adopt the austere tone of condemnation in which Dr. Kinglake has written against it; or concur in his extravagant opinions of its influence in exciting indigestion and even organic diseases of the stomach. Yet all must acknowledge that the habit is as impolitic in principle as unseemly in practice. The habituation of any organ to an unnatural stimulant, the want of which may become, at some future period, a source of inquietude and regret, is, independently on the injurious effects directly resulting from it, reprehensible and unwise. These evils, however, are, in the present instance, but as dust in the balance, when contrasted with the insidious tendency and almost irresistible influence of an early-acquired habit of artificial stimulation. As the system becomes inured, and consequently insensible, to the milder agent, it will experience the want of one still more powerful. On this obvious principle, the young man who acquires, from whim or fashion, the obnoxious practice of cramming his nostrils with snuff, will too often become, by progressive steps, a smoker and a sot. Of the moderate use of this substance as a grateful stimulant in the torpor of advanced age, or its regulated employment as a remedy for disease, these strictures are not intended to operate in prohibition. The

ters and operation of the different gaseous and
n agents are next to be examined.

various *Gases* which induce suspended anima-
death in the human subject, may be classed under the respective titles of the Irrespirable, the Irritating, and the Deleterious.*

The *Irrespirable Gases* are common Atmospheric Air, deprived of its due proportion of oxygen, by previous respiration or combustion ;—Nitrogen Gas or Azote ;—Hydrogen Gas ; –and Carbonic Acid Gas or Fixed air.

In order that the unprofessional reader may acquire a correct notion of the mode in which the irrespirable gases act upon the system, it will be necessary to exhibit a slight sketch of the constitution of the common atmosphere, and of the chemical change which it produces, in respiration, upon the blood contained in the vessels of the lungs.

The atmosphere, which surrounds the globe, consists of an admixture of oxygen gas and nitrogen in the proportion of twenty-two parts of the former to seventy-eight of the latter.† The oxygen forms the essential principle in animal respiration : the nitrogen seems to operate merely as a diluent. On introduction of the external air into the lungs, in the

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* See *Dictionaire des Sciences Médicales*, Tom. II. Article, *Asphyxia ;* or *Medico-Chirurgical Journal*, Vol. I. p. 80.

† The atmosphere contains also, but not in a state of chemical combination with it, one part in the thousand, of carbonic acid gas.

process of breathing, a great portion of the oxygen is separated from it; and some chemical combination or change, of a nature not yet precisely ascertained, takes place between the blood contained in the vessels of the lungs and this oxygen.* The blood, which, before its exposure to the influence of the vital gas, was dark-coloured, and, in the language of science, loaded with carbon, assumes, upon its contact with the air, a bright-vermilion hue, and acquires a character and properties, of which, in the course of circulation through the system, it had previously been deprived. The dark venous becomes suddenly changed into florid arterial blood. To undergo this vivifying process, the whole blood of the system is brought successively into,—and passes through,—the lungs; and thus a principle is imparted to it, without which it is incapable of stimulating to action the heart and brain, and consequently unfit for the

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* Messrs. Allen and Pepys (See *Philosophical Transactions*, 1808—1809.) assert that all the oxygen which atmospheric air loses, may be accounted for in the Carbonic acid gas, and the aqueous vapour, expelled from the lungs, in respiration. If this statement be correct, the blood, instead of absorbing oxygen, as once believed, is decarbonized. The mystery involving the question, is not yet satisfactorily dissipated. The production of animal heat had long been ascribed to the chemical changes effected by respiration. Subsequent investigation has rendered it probable that the supply of vital warmth is rather a function of the brain and nervous system. At all events, the evolution of animal heat is not a necessary consequence of respiration, or of provision with a cerebral apparatus. The Amphibia and Fishes possess a brain and spinal chord; and breathe;—the first by lungs; the latter, by gills. Yet are they, without one solitary exception, cold-blooded animals.

sustenance of life.* The air, driven out in expiration, must obviously contain less oxygen than at the period of its admission; and is still further deteriorated by the presence of a considerable portion of carbonic acid gas which it has received in the lungs.

Combustion operates precisely like respiration in depriving atmospheric air of its oxygen and imparting to it carbonic acid. In ordinary language, a candle is said to consume, or render unfit for respiration, as much air, in a given time, as the human adult. That animal life cannot be sustained by an atmosphere in which the candle will not burn, is a notorious fact. Hence, the popular precaution of introducing, previously to personal descent, a light into any subterraneous cavity, where an accumulation of air deficient in oxygen may be supposed to exist. It is, therefore, evident that when, by respiration or combustion, the natural proportion of oxygen in the atmosphere has been much reduced, the remaining fluid will not support animal life. Air, thus circumstanced, constitutes, in the preceding arrangement, the first of the Irrespirable Gases.

Air vitiated by respiration will necessarily exist wherever human beings are crowded together in close rooms, and the free ingress of the external atmosphere is obstructed. The oppression and languor experienced by individuals in a full theatre or other

* This fact is clearly proved by the beautiful experiments of Bichat. See his *Recherches Physiologiques sur la Vie et la Mort*. Paris, 1805.

crowded place of public assembly, are attributable to this cause operating in a slight degree. To illustrate its more full and fatal influence, the dreadful scene which, many years since, was exhibited in the black hole at Calcutta, may be appropriately cited. The symptoms, induced by respiration of unrenewed air, are increased rapidity of pulse and breathing, followed by slowness of the latter, stupor, and death. —*Nitrogen Gas* exists in privies; and is one of the causes from which nightmen occasionally suffer. As a constituent of the atmosphere, it also contributes to the effects consequent on the inhalation of vitiated air. The symptoms which it determines, are, disordered respiration immediately on immersion in the gas; subsequently, unusual depth and rapidity of breathing; and progressive debility without apparent disturbance of the nervous system.—Of *Hydrogen Gas*, dangerous accumulations principally occur in coal-mines where workmen are often scorched or destroyed by its tremendous explosions.* It may be respired for some time with impunity by man. The symptoms which follow its continued inhalation, are, uneasiness in the breast, loss of muscular power, and giddiness. The muscular irritability is said to remain longer than in suspended animation from immersion in nitrogen.—*Carbonic acid Gas* is copiously

* It is deeply to be lamented that the use of the Safety-Lamp, invented by Sir Humphrey Davy, has not been universally introduced into coal-mines. Many dreadful accidents might be annually prevented by this simple instrument.

evolved during the process of vinous fermentation: hence, its effects are most commonly observed in breweries and cellars. It prevails in the vicinity of lime-kilns, and exists naturally in some subterraneous cavities.* The experiments instituted to determine its effects on the respiration of animals, are not conclusive. It is invariably extricated in respiration; and constituting an ingredient in air vitiated by that process, contributes to its noxious influence. In subjects destroyed by this agent, the body retains its warmth long after death; and muscular irritability is preserved for more than twenty-four hours. From a retrospect of the principle on which the irrespirable gases operate, it may be inferred that restoration to the external air is the best remedy in suspended animation resulting from their influence. Aspersion with cold water, irritation of the nostrils by stimulants, and all the other means of recovery indicated in suffocation, should be promptly employed; and actively persevered in until general rigidity of the muscles, a characteristic sign of death, has taken place.

The *Irritating Gases* are the *Sulphurous Acid*, the *Oxymuriatic Acid*, and the *Ammoniacal*. The two former rarely exist in nature. The latter is copiously generated in stables and privies. Little is known of

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* As the Grotta del Cane by the lake of Agnano, in the vicinity of Naples. A very good description of this natural reservoir of Carbonic Acid Gas, is given by Valentin. See his *Voyage en Italie*. Paris, 1826.

their operation on the animal economy. They provoke cough; and when respired alone, soon destroy life. The peculiar remedies for them are not determined. Exposure to the air naturally suggests itself as one of the most efficient.

The *Deleterious Gases* respecting which correct notions have been acquired, are the Nitrous; the Carbonous Oxyd, and Carburetted Hydrogen; and the Sulphuretted Hydrogen. When inhaled by animals, these gases not only abstract from the lungs the respirable principle, and produce irritation and death by the sympathy which exists between them and the other organs; but they exert an influence, apparently by absorption. *Nitrous Gas* differs more in its properties than composition, from the well-known Nitrous Oxyd. Small animals plunged into it, almost immediately expire in terrible convulsions. Great debility, heat and dryness in the throat; irritation of the chest, constriction of the stomach; scantiness of urine with subsequent strangury; expectoration of a yellowish fluid, cough, nausea, and vomiting,—were the symptoms exhibited by a man who died twenty-four hours after inhalation of this gas. The face became blue, and the chest embarrassed, at the seventeenth hour. Rattling, hickup, pain in the region of the diaphragm, convulsions, slight delirium, and inexpressible agony ensued, The body swelled remarkably after death: the countenance became purple; the lips black; and blood oozed from the nose and mouth. *Carbonous*

Oxyd and *Carburetted Hydrogen*, are both disengaged from burning charcoal. To which of them the pernicious effects of its vapours are attributable, is yet unknown. Both probably exert a noxious influence. In admixture with atmospheric air, the action of these gases is not sudden. Violent head-ach, constriction of the temples, giddiness, palpitations, noise in the ears, occasionally nausea, difficult respiration, disorder and loss of vision, prostration of strength, and inability to stand, are the symptoms which they induce.* The bodies of those destroyed by charcoal-vapour, long retain their warmth, Sometimes, the temperature is even preternaturally raised. The countenance is swollen; the eyes bright; the lips of a vermilion hue; the body tumefied, and often marked with violet-coloured spots. The treatment consists in prompt exposure to the open air; the internal administration of diluted vinegar; injections of cold water; and active friction. In severe cases attended with drowsiness, especially if the face be flushed, the eyes prominent, and the lips swollen, bleeding from the external jugular vein is indicated; and a vomit, if there exist distension of the stomach

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* These were the effects experienced by the writer after having unconsciously respired, for half an hour, an atmosphere loaded with the vapours of burning charcoal. Cases of suspended animation and death from this cause, are published by Larrey, *Mémoires de Chirurgie Militaire*, Tom. III. p. 13;—by Dr. Babington, *Medico-Chirurgical Transactions*, vol. I. p. 83;—and a Case, illustrating the permanent operation of the aërial poison upon the brain and nervous system, by Dr. Palmer, *Medico-Chirurgical Journal*, Vol. IV. p. 193.

and nausea. Purgative injections and stimulants may also be employed. Spirituous liquors, and a very warm bed, are injurious. To *Sulphuretted Hydrogen Gas*, the noxious effects of privies* are principally attributable. The symptoms, resulting from its inhalation, are a peculiar uneasiness; pain of the stomach and joints; obstructed respiration; drowsiness; delirium, convulsions, and loss of memory. The treatment, exposure to the free air, sprinkling with cold water, and frictions with vinegar. The workmen exposed to the action of this gas, are said to employ a vomit of olive-oil in the earlier stages; and afterwards to exhibit a little brandy.

Of the *Aëriform Agents* which now come under consideration, a division may be made, according as the body or source from which they emanate, is Vegetable, Animal, or Mineral.

Vegetable Effluvia may arise from plants in a fresh or living state, or in that of desiccation, combustion, or decay. Of their effects in these several conditions, a few of the most striking instances will be exhibited.

Many plants, when *living or recently gathered*, give out a subtle odour from the continued inhalation of which, injurious consequences frequently result.

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* About eighteen months ago, three stout middle-aged men were destroyed at Gloucester, by the "foul air" of a vault which they were employed to empty. One of the men was drawn out alive; but died in half an hour. Blood-letting appears, by the statement in the *Cheltenham Chronicle*, to have been the principal remedy resorted to in this lamentable case.

This noxious property exists more especially in those plants which possess peculiar fragrance, or belong to the powerful tribe of the Narcotics. Hence, the effects which have been experienced from confinement to an atmosphere loaded with the emanations of odoriferous flowers; or from sleeping beneath the shade of the hawthorn or the elder, when in blossom. Hence too, the confusion, stupor, giddiness, and nausea, consequent on exposure to the effluvia of newly-gathered narcotic plants.*

Of the influence of certain vegetable substances, in a *Dried State*, the powder of Ipecacuanha may be cited as a curious illustration. Great irritation of the membrane of the nose and throat, with difficulty of breathing nearly allied to asthma, has, in some instances, been clearly traced to the opening of a phial of Ipecacuanha, in a situation perfectly distinct and even remote from the room occupied by the person who so severely suffered from its effluvia.† It is probable that several other pulverized vegetable

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* The writer was made, a few years ago, very ill by placing beneath his feet, in an open carriage, a fine specimen of the Henbane (*Hyoscyamus niger*) which he had gathered three miles from home. Twenty-four hours elapsed ere he perfectly recovered from the head-ach, nausea, and tremors, which the noxious effluvia of the plant had induced.

† The narrator of one of the cases here alluded to, states that, immediately on detecting the connection which existed between the exposure of the drug and the paroxysm of difficult breathing in his lady, he caused his dispensary to be removed to a building remote from his dwelling-house: and the result of the experiment completely justified his suspicions. The fit of asthma, before frequent, did not, from that period, recur. The statement appeared, many years ago, if the present writer mistake not, in the *Medical and Physical Journal*.

substances are capable of producing a similar, although not equally potent and peculiar effect.

The most familiar example of the operation of the effluvia of Plants in a *State of Combustion*, upon man, is afforded by the pernicious but fashionable practice of inhaling the fumes of the Tobacco-leaf, prepared or simply dried. The observations heretofore made on the abuse of Snuff, are applicable with tenfold severity and force, to an early indulgence in this baneful luxury. The young man who, unjustified by the plea of ill-health, or unsanctioned by the prescription of his physician, has acquired the habit of smoking pipe or cigar, may assuredly congratulate himself on having reached the second stage of his progress from temperance to dissipation,—from elasticity of spirit and vigour of frame to premature imbecility and decay. As the reckless poacher is gradually led on, from his work of midnight depredation in the woods, to more daring acts of violence and rapine; so will the youthful Smoker be too often insensibly allured from a wanton indulgence in the cigar to the sins of intoxication, and the ultimate sacrifice of his health, his character, and prospects. Let Parents, then, as they appreciate the responsibility which devolves upon them, solemnly protest against, and resist, the first encroachment of this pernicious habit in their family. Let the Women of England, whose influence is commonly as beneficent as irresistible, exert their powers in decrying the noxious practice, and averting from those in whose

reputation and welfare they are so deeply interested, the moral pestilence. If the leaders of fashion in the land are resolutely bent on destroying the little remnant of energy and character which they still possess, let them pursue their ignoble propensities, and achieve the work of moral ruin as they are wont to dissipate their fortunes, in private. Society will be disposed to contemplate with singular philosophy and forgiveness, any act of moral suicide which these "Spoilers of the human hive" may be tempted to commit. But let them not contaminate with noxious exhalations the public atmosphere ;* nor the minds of the thoughtless and inexperienced, who are too frequently actuated by the vulgar ambition of aping fashionable follies, with their yet more pestilent example. Many a youthful culprit, now suffering in imprisonment or exile, the penalty of crime, would, if closely interrogated on the origin of his degradation, acknowledge that he fell a victim to propensities of which the practice of smoking formed one of the

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* The execrable practice of masticating Tobacco has not been adverted to: since it is now almost exclusively confined to the lowest orders. Cigar-smoking must be a more ancient custom than has hitherto been supposed: or the Poet, who, in the 16th century, so aptly depicted the strange spectacles constantly exhibited in the streets and thoroughfares of England at the present period, must have been endowed with the miraculous power of second-sight:

"There, in the twilight, stalks
An apparition dire, breathing out flame,
And wrapt in cloud of most unholy vapour."

earliest steps in his fatal deviation from the paths of temperance and of rectitude.*

Independently on the thirst for stimulating liquids, which the inhalation of tobacco-smoke notoriously excites, it produces a directly narcotic influence upon the brain; impairs the vigour and sensibilities of the organs of intellect; and in conjunction with the habits engendered by it, ultimately deranges the intestinal functions. Hence it is an indulgence hostile alike to man's physical and intellectual welfare. And by all who can appreciate the value of a vigorous digestion, or are inspired by the generous ambition of attaining a distinguished rank in literature or the sciences, habits of artificial stimulation will be sedulously avoided; and the employment of tobacco be resolutely resisted or abjured, as one of the worst, because of the most insidious, in the catalogue of chronic poisons.†

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* The following Extract from the *Confessions of a Convict*, which depicts with such admirable clearness and precision, the successive steps in the career of a modern Profligate, is pregnant with warning to the youthful reader: and while affording melancholy confirmation of the opinions here advanced, will form some apology for the austerity with which they have been expressed:—"No young man, sir, was more happy and respected than myself, till I began to ape the manners of my betters,—to dress, *take snuff* and *smoke* like any gentleman. I next took to drinking; got acquainted with bad women; went to the gaming-table to support my expences; lost my all; robbed my generous and confiding masters; was detected; and here I am: just snatched from a death of infamy, by their undeserved kindness; but doomed to a fate hardly less dreadful,—that of banishment from my country, for life."

† The learned but pedantic King James I. wrote a pamphlet entitled, *The Counter-blast to Tobacco;* which he concludes by denouncing the use of this

There are, however, some morbid affections the progress of which may be arrested, or their attendant sufferings relieved, by the regulated inhalation of tobacco-fumes. To these diseases, and the principle upon which the remedy operates, an opportunity of adverting will occur, when the influence of vicissitudes of temperature on the human system is considered. But the practice should never be adopted without professional advice; nor continued beyond the period which necessity absolutely demands. As a solace in the winter of age, particularly when cough and difficult respiration announce a torpid action of the pulmonary absorbents, the moderate use of tobacco may be advantageously directed;—and pursued without apprehension of those physical and moral consequences which prohibits its employment in health and early life. By stimulating the mucous membrane of the lungs, it will promote the absorption, or facilitate the expectoration, of the secreted fluid;—blunt by its narcotic operation upon the brain and nervous system, their sensibility to morbid impressions;—and shed a soothing and a softening mist around the countless pains and disquietudes which signalize the process of senile decay.*

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plant as "a custom loathsome to the eye, hateful to the nose, harmful to the brain, dangerous to the lungs, and in the black stinking fumes thereof, nearest resembling the horrible Stygian smoke of the pit that is bottomless."

* It may here be right to remark that the paroxysm of spasmodic asthma is sometimes greatly relieved by smoking the dried leaves of the Thorn-apple (*Da-*

The exhalations from *Decaying Vegetable Substances* constitute, in scientific language, Marsh Miasmata. They are evolved by stagnant waters, fens, and swampy lands, where vegetable bodies are undergoing the process of decomposition. To the influence of these exhalations, are attributable the several varieties of Intermittent Fever or Ague, once so prevalent in England; but now rarely observed except among the inhabitants of fenny districts. That the draining of the soil, the clearing of the island from the numerous and extensive forests with which it was heretofore covered, and other operations consequent on an improved system of agriculture, have been principally instrumental in averting the ravages of of this once formidable scourge, there can be no doubt. Upon a disease the origin, phenomena, and treatment of which are so well understood, it would be superfluous to dwell. In all the cases of ague, which it has hitherto been the lot of the writer to examine, decided symptoms of cerebral congestion have marked both the commencement and progress of the affection: and the success of a curative plan*

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tura stramonium.) The difficulty of breathing and distress have, however, in some cases been aggravated by it. A sense of heat in the throat and chest, suppressed expectoration, and vehement head-ach, are the usual consequences of an unsuccessful experiment. Upon what peculiarity of the disease or its complications, this diversity of effect is dependent, no precise knowledge has, at present, been acquired.

* This treatment will be best exemplified by the detail of a case. Last spring a young tradesman had suffered long from ague, contracted during his residence

modified by these views, has been so prompt and striking as to strongly favour, if not decisively prove, the correctness of the observation.

Animal Effluvia may arise from the living body in a state of health, or of disease; or from animals when deprived of life. To the first source may be referred the noisome and offensive exhalations which contaminate the atmosphere of crowded and imperfectly-ventilated places of human habitation. Ships, prisons, hospitals, the sleeping-rooms of the poor, and those situations in which many persons are congregated without due attention to cleanliness and ventilation, most commonly exhibit the presence and operation of the human miasm.* The second will obviously

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in Lincolnshire. The paroxysm had, for some time, recurred at uncertain periods. The symptoms observed on the writer's first visit, Sunday noon, were principally, head-ach, loaded tongue, debility, great mental depression, scanty and unnatural discharges.—Prescribed, *a brisk emetic immediately; a full dose of Calomel at night, followed by a morning purgative: Ammonia in Camphor-mixture, on recurrence of the fit.—Diet: Tea, gruel.*—Monday. *Calomel and antimony, in large dose, every six hours; Acetate of Ammonia in the intervals; hair removed; cooling lotion to the head.* Tuesday. Head-ach intense, with violent throbbing of the carotid arteries. *Fifteen leeches to the temples; medicines continued: purgative, next morning.* Wednesday. Head much relieved. *Medicines continued: blister to the nape of the neck, if the pain return.* Thursday. Countenance improved; tongue clean; skin moist; evacuations free and natural; mouth slightly sore. *Calomel discontinued: a purgative.* Friday. *Sulphate of Quinia, two grains every six hours; more generous diet.* Recovery, from this time, rapid. With the exception of slight rigors on the evenings of the second and third day, the paroxysm never re-appeared during the treatment: and has not, to the writer's knowledge, since returned.

* History records more than one instance of the communication of a dreadfully infectious fever, from prisoners, during their trial, to the members of a crowded and ill-ventilated court, in this country. An event, of this nature, took place at Oxford, in 1577; and at the Old Bailey, London, in May, 1750. On the latter occasion, many persons fell victims to the infection.

comprehend the subtle essences of the different infections. To the last belong the effluvia of animal matter during the process of decomposition after death; as experienced in the atmosphere of the burial-ground, and in that, still more decidedly noxious, of the dissecting-room and the slaughter-house.

From an ingenious experiment recorded by Mr. Abernethy, it seems probable that Carbonic acid Gas is copiously secreted by the vessels of the skin; and hence, that the cutaneous concurs with the respiratory exhalation in vitiating atmospheric air, and rendering it unfit for the sustenance of life. The remarks made in a preceding chapter, will obviate the necessity of expatiating farther on the subject here. In addition to these combined sources of atmospheric contamination, the oily fluid poured out on the surface of the skin for the purpose of lubrication, acquires, if frequent ablution be neglected, an offensive odour, and adds greatly to the aërial impurity arising from other causes. This state may exist for such a period, and in such a degree, as to become a direct source of infection. Hence, to the crowded habitations of poverty and filth, the origin of diseases determined by the inhalation of the human miasm, may, in general, be clearly traced. Viewed in its obvious relations with this subject, and in its operation on human health and welfare, the Window-tax* may be justly denounced as one of the most

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* No one who can rightly appreciate the securities of person and property, conferred by the social system, and the arduous circumstances in which England has

impolitic and oppressive imposts, which the inventive Genius of Finance has ever yet contrived to inflict upon a country.

The various *Specific Diseases*, which afflict man, may be classed under three heads. The *First* will include those which are exclusively propagated through the medium of the atmosphere; and in which, contact with an infected person or substance is consequently not requisite for the communication of the disease,—as Typhus, Puerperal or Child-bed Fever, one variety of Erysipelas, Scarlet-fever, Measles, and Hooping-cough. To these, in correct language, the epithet, *Infectious*, should be rigorously restricted. Under the *Second* may be arranged those affections which are susceptible of communication both by exposure to an infected atmosphere and by introduction of a morbid poison from the surface into the system,—as Small-pox, Chicken-

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been placed, will declaim against the principle or necessity of taxation. The errors in its practice are, however, open to inquiry, What would be the objection to transfer a tax, of equivalent amount, from the windows to the house itself, the political economist can alone determine. The advantages of such a measure are self-evident:—It would, without any diminution of the revenue, give occupation to hundreds of workmen almost destitute of employment; directly increase the consumption of glass, already paying a considerable impost;—and render the dwellings of the inferior gentry and tradesmen,—now ill-ventilated, gloomy, and prison-like in their exterior,—salubrious, cheerful, and smiling habitations. When the potent but insensible influence of external circumstances on the human frame is considered;—the immediate dependance of the physical on the moral welfare,—of mental serenity on domestic comfort,—this question assumes an aspect of public importance, which it may not, at first sight, appear to possess. In this view only can the medical writer consistently presume to direct upon it the attention of the country and its legislature.

pox, and perhaps the Plague. The *Third Division* comprehends those diseases which are exclusively communicable by contact or inoculation, as Cow-pox, Syphilis, Hydrophobia, and some cutaneous affections; all of which, from their mode of propagation, should, in strict propriety, be designated *Contagious.* Consistently with this arrangement, the first and second division only can be examined in the present chapter.

On the causes, character, and treatment of *Typhus-Fever*, so many experienced writers* have, within the last few years, delivered their opinions, that little, possessing interest or novelty, remains to be advanced respecting it. There are, however, some facts connected with it, which, although well-known by discerning practitioners, have not been impressed with sufficient clearness and force upon the public mind; or altogether escaped the observation of authors on Typhus. To these as powerfully influencing the treatment or prognosis of the disease, it will be requisite briefly to advert.

By some writers it has been thought that Typhus consists in inflammation of the membranes of the brain, peculiarly modified. Without admitting to its full extent, the correctness of this opinion, it may be confidently asserted that, in genuine typhus, the

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* Among these, the name of the enlightened and indefatigable Dr. Armstrong stands pre-eminent. See his *Practical Illustrations of Typhus.*

brain and spinal marrow commonly exhibit the most unquestionable signs of deranged function. This fact will be at once established by examining, under the respective heads of symptoms, consequences, morbid alterations, and treatment, the various phenomena and results observed in Typhus. On no other principle except that of the existence of diseased action in the coverings or substance of the cerebral mass, are these phenomena and results satisfactorily explicable.

The more prominent *Symptoms* which occur in Typhus, are head-ach, confusion, ringing in the ears, depraved taste and smell, morbid sensibility of the organs of sight and hearing, a dry, loaded, brown tongue, and sense of dull pain or stiffness extending from the back of the head down the spine, frequently to the extremities. These, in unfavourable cases, are succeeded by delirium, deafness,* impaired vision, extreme loss of strength, tremor and convulsive twitching of the muscles, hickup, distended abdomen, involuntary evacuations, and insensibility commonly terminating in death.

Marked puerility of conduct and even transient idiotism, mania, apoplexy, epilepsy or partial paraly-

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* Deafness when occurring in the progress of Typhus, is commonly regarded as a favourable sign. The patient in whom it arises, unaccompanied by hickup, subsultus, or other decidedly bad symptom, will in general recover. In a case lately observed by the writer, where deafness was complicated with these untoward appearances and a distended abdomen, the man died.

sis,*—all evidently connected with lesion of the brain or spinal chord, are the common *Consequences* of severe Typhus.

The principal *Morbid Conditions* observed on dissection of persons who have been destroyed by this fever, are a loaded state of the vessels of the brain; slight inflammation and thickening of its membranes; and effusion of serum among the convolutions, or within the cavities, of the organ.†

The beneficial results obtained in the *Treatment* of Typhus, by early sanguineous depletion from the head, removal of the hair, evaporating lotions, mercurials, antimony, exclusion of solid food, light, and sound;—in fact by the employment of all the remedies calculated to subdue increased action of the vessels, and avert every source of cerebral irritation, —must be as well-known to the experienced practitioner as the injurious or fatal consequences of the stimulating practice either in the onset of the disease, or before the period for the safe or effective prescrip-

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* Several cases of Paralysis consequent on severe Typhus, have been observed by the writer. Two of them are cursorily mentioned in the *New Medical and Physical Journal*, Vol. VII. p. 104. It generally occurs in young, robust, and florid subjects; and is incurable. In a girl, lately seen, palsy of the whole side was complicated with a peculiarly vacant expression of countenance, mental imbecility, and slight hesitation of speech,—not previously existing.

† See the facts recorded by Professor Haviland and Dr. Harrison, on dissection of a gentleman who died of the "Cambridge Fever." *Medical Transactions*, Vol. V. p. 395—405.—Ulceration of the mucous membrane of the bowels has sometimes been discovered in fatal Typhus. But it constitutes no distinguishing character of the disease. Phthisis, Hooping-cough, and other affections frequently exhibit a like morbid alteration.

tion of tonics has been clearly announced by the declining dryness of the tongue and skin.*

Among the symptoms which frequently occur towards the close of fatal Typhus, one has been mentioned in a preceding paragraph; of which the writer does not recollect to have met with any distinct notice in the oral or written communications of professional men. This symptom is a great and apparently tympanitic *Distension of the Bowels*. Ten years ago, it first attracted his attention. Of several cases in which it has since occurred, the issue has been invariably unfortunate. At first it was supposed to arise from retention of urine, or inflammation of the membrane investing the bowels. Subsequent experience and reflection have served to demonstrate the inaccuracy of these opinions. The bladder will in general be found empty or little distended: the abdomen evinces no soreness on pressure; nor is there any other sign of intestinal inflammation. The distension comes on at a period when the energies of the system are apparently too much exhausted to set up or sustain the inflammatory process. It is

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* Patients are frequently destroyed in Typhus, by the too early administration of Stimulants. Employed while the tongue is yet dry and the skin hot and arid, they almost invariably aggravate these morbid conditions, and accelerate the occurrence of the concluding stage. The unnatural state of the tongue in this affection appears to be closely connected with, or dependent on, that of the brain. By the application of leeches to the temples, the parched condition of the former organ will frequently be removed in a few hours. Decapillation, and sponging of the body with diluted vinegar will signally promote this auspicious change.

preceded or accompanied by hickup, twitching of the tendons, a sunken countenance, and all the other indications of irrevocable failure of the vital powers. No remedy, internal or external, seems to relieve, for a moment, the sense of disquietude connected with this portentous sign or to arrest its fatal progress. May it not be attributed to loss of power in the muscular coat of the intestines, from diminution of the cerebral energy; and a consequent yielding of the membranes to the expansive force of the contained gases?* The period of its occurrence, its peculiar characters, attendant phenomena, and fatal issue,—all conspire to invest with an air of plausibility this hypothesis. Further observation can alone entitle it to confidence as an established truth.†

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* In the fatal case already adverted to, it is distinctly stated by Professor Haviland and Dr. Harrison, that "the bowels were much *distended with flatus*."

† Within the last twenty years, the author has collected some curious facts respecting the origin and propagation of Typhus. From these, a striking example of its spontaneous commencement and obstinately infectious nature may be adduced. A robust young man, occupied in "ditching," near a healthy and finely-situated village in Staffordshire, was attacked with fever and pain in the limbs. The anti-inflammatory treatment was adopted. About the fifth day, without evident cause, the tongue became suddenly hard and black; the teeth covered with sordes; and the body with petechiæ. Delirium and subsultus ensued. He died next day. The mother, who had nursed him, sickened on the Monday, and expired on Wednesday morning, with symptoms yet more strongly marked. The fetor of her body before death was dreadful; after it, intolerable. Scarcely was life extinct when decomposition commenced; and, in a few hours, the corpse exhibited a mass of putridity. The house was immediately cleared of its inmates and furniture; white-washed, and fumigated under the inspection of the writer, and locked up. But the disease had already shewn itself among the children of an adjacent cottage; and from them been communicated to several persons in the village. The fever first shewed itself in early spring: autumn arrived ere it had completely disap-

Of the infectious nature of *Puerperal Fever*, a sad experience has left no room for the existence of doubt.* Peritoneal inflammation apparently constitutes the essential character of this terrible scourge of puerperal woman. The progress of the inflammatory action may sometimes be clearly traced from that portion of peritoneum which invests the uterus,† to the other surfaces of this extensive membrane. The exhibition of an active emetic‡ and purgative

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peared. During the winter which followed, every vestige of it seemed extinct. But no sooner, in the ensuing spring, were the two deserted tenements re-occupied than typhus, of a milder character, was developed among their inmates, and again extended to the village. A second time, was the disinfecting process more rigorously employed: and the houses shut up for many months. The fever again broke out on their being re-tenanted. Nor was the village completely freed from the scourge of typhus, until the two cottages from which the infection had originally emanated, were, at the suggestion of the writer, demolished.

* The celebrated Dr. Denman communicated the disease to nine puerperal women, in consequence of having visited a patient who was ill of putrid sore throat. All these women died. At a more recent period, the same dreadful fate was, within a few days, entailed upon fourteen or fifteen females, by an eminent Physician-Accoucheur, who had conveyed the infection from a typhus-patient. The practical inference to be drawn from these melancholy facts, is, that no medical practitioner should proceed from the house of any patient labouring under an infectious disease, to the room of a child-bed woman, until he has changed his dress, and employed every other precaution by which the possibility of communicating infection may be prevented.

† "The uterus exhibited externally slight marks of inflammation. Its peritoneal covering was more red and somewhat thicker than usual, especially towards that part of the fundus where the left Fallopian tube emerges." See a "Case of Puerperal Fever," by Dr. Ley. *Medical Transactions*, Vol. V.; and a "Fatal Case." By Dr. Palmer. *New Medical and Physical Journal*, Vol. X. The best monographs on this subject, are Dr. Armstrong's *Facts and Observations;* and Mr. Hey's *Treatise on the Puerperal Fever.*

‡ Many years ago, Puerperal Fever committed great devastations in the Lying-in Hospitals of Paris. Almost every woman attacked by it, died. The physicians

on the first appearance of the symptoms, blood-letting, general and local, succeeded by Calomel and Opium, fomentations and blistering, will frequently cut short the disease, or so mitigate its violence as to secure a favourable termination. But the practitioner must act on this occasion with the utmost promptitude and energy. If a few hours only are wasted on impotent or temporizing measures, the loss will be irrevocable: for the disease will then have acquired an overwhelming ascendancy. Where the brain evinces the well-known signs of fullness or increased action, blood may be drawn, with signal benefit, from the temporal artery or external jugular vein; and all the advantages of general and local depletion be obtained at once. The head, in such case, should invariably be shaved; its heat be abstracted by evaporating lotions; and the brain kept in perfect repose by a rigorous exclusion of light, and sound, and all exciting objects. Of the employment of Spirit of Turpentine in the more advanced stages of Puerperal Fever, the writer has had no experience. Numerous instances of its efficacy have been recorded. The principle upon which it oper-

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discouraged by the failure of every variety of treatment, relinquished their appointments. "At this time, a woman, suffering from the disease, took, by mistake, a mixture of Kermes' Mineral, Oil, and Ipecacuanha. She vomited and recovered. It was given to a second, with the same fortunate result. And thus was laid the foundation of a new and more successful treatment." From the *Manuscript Lectures* of the late Dr. Andrew Thynne, Lecturer at St. Bartholomew's, London.

ates, is not clearly comprehensible. Reasoning, however, must invariably yield to facts.

Erysipelas is not ordinarily susceptible of communication from one individual to another. Yet that it occasionally becomes complicated with typhoid symptoms, and assumes an infectious character, irresistible evidence may be adduced to prove.* The principal object of the present cursory notice is to remark that, in all cases of constitutional erysipelas, the functions of the brain, as well as those of the intestinal canal, are invariably disordered. And it is doubtful whether in these, as in some other instances, the derangement of the digestive organs is not dependent, or consecutive, upon the cerebral congestion. Unequivocal signs of the existence of the latter state may constantly be recognised, in Erysipelas, by the accurate observer: and the removal of it, whether spontaneous or accomplished by art, will often be conspicuously and closely followed by relief from the intestinal affection. The impolicy and danger of the prescription of cold, astringent, and repelling applications, in constitutional Erysipelas, will be sufficiently exposed by these views. Several examples of violent illness, and some of effusion into

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* See "Observations on Erysipelas." By Dr. Wells, in the 2nd vol. of *Transactions of a Society for the Improvement of Medical and Chirurgical Knowledge;* some valuable Remarks, in the *New Medical and Physical Journal*, Vol. VIII. p. 517; and numerous Cases in the different periodical publications on Medicine.

the brain, and paralysis, resulting from the abuse of these remedies have been observed by the writer.* Frequent fomentation with hot water constitutes the best palliative. It will sooth the pain and irritation inflicted by the disease, until the cause from which it has arisen, can be removed. Of the occasional effect of the Blistering-plaster in exciting a cutaneous eruption which somewhat resembles Erysipelas,

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* Some years ago, a robust young woman was seized with severe Erysipelas of the cheek. A purgative and cold applications were prescribed. The affection suddenly disappeared: delirium succeeded; and, ere many hours had elapsed, the patient died in profound stupor.—A puerperal female sustained an attack of erysipelas, preceded by head-ach, nausea, and shivering. To allay the smarting and irritation, an astringent lotion was applied. Vehement head-ach, confusion of sight and intellect, and great perturbation of the system, were the immediate consequences of this error. By the writer's directions, leeches were applied to the head; hot fomentations to the face; and ammonia given internally. The eruption quickly re-appeared; and all the menacing symptoms gradually subsided.—A middle-aged florid-looking man requested the writer's opinion respecting an erysipelatous affection of the leg. It had been of long duration, and resisted all the remedies, principally local, which different practitioners had recommended. The loaded state of the minute blood-vessels of the cheek and eye; the strong pulsation of the arteries of the arm and neck, and the occasional "swimming in the head" and numbness of the hands complained of by the patient, announced the existence of dangerous fullness of the system, and especially of the brain. He was actively employed in business of great responsibility; and addicted to habits of dietetic indulgence. The dependance of the local malady on constitutional causes, its connection with the state of the brain, and the danger of repellent remedies, were now clearly pointed out to him. He was recommended to relieve his mind, as much as possible, from the pressure of his occupations; to take purgatives; simply foment the leg with hot water thrice a day; and, more than all, to reduce the quantity of his food. Impatient, however, to rid himself more expeditiously than such a plan seemed to promise, from the pain and inconvenience which he constantly suffered, the applicant neglected this salutary advice; used repellents; sustained forthwith an attack of apoplexy from which he subsequently recovered; and thus purchased prompt exemption from comparatively trivial suffering, at the imminent peril of his life.

but forms an essentially different affection, with severe constitutional irritation and debility, an opportunity of speaking will be presented in the next chapter.

Scarlet Fever is a disease too well-known to require minute description. Three distinct varieties of it are enumerated by the latest writers,—the *Simple*, the *Anginose*, and the *Malignant*. They differ in severity, and consequently in danger. They are all decidedly infectious. In the first and second varieties, cold sponging, purgatives, and the mineral acids, with a rigorous prohibition of stimulants, will commonly suffice to conduct the disease to a successful issue. And the debility, which ensues, will be best obviated by nutritious diet and mild tonics. If, however, the latter remedies be prematurely employed, they almost invariably aggravate the symptoms, and endanger, or protract, the recovery of the patient. The delirium, which frequently occurs in the second variety of scarlatina, will be most efficiently subdued by removal of the hair, application of leeches to the temples, and the employment of refrigerating lotions.* In fatal cases of Scarlatina,

* A young lady, on the fourth day of a severe attack of anginose Scarlatina, sank into stupor. The skin was excessively hot and dry; the pulse rapid and oppressed. No distinct view could be obtained of the tongue and throat. The head, under these unpromising circumstances, was cleared of its load of hair; eight leeches applied to the temples; the morbid excess of temperature reduced by repeated sponging with vinegar and water; and the bowels relieved by a dose of Calomel, thrice repeated. Next day, every unfavourable symptom had disappeared.

death is very commonly caused by inflammation of the membranes of the brain, and effusion of serum into its cavities.

The Malignant Variety of Scarlatina is a very terrible disease. It requires a plan of treatment differing materially from that which has just been traced as applicable to the two preceding varieties. Mild emetics must be substituted for purgatives, in the commencement of the disease; and sponging with tepid vinegar, or spirit, and water, for the cold ablution. Abstraction of blood is, in ordinary cases, inadmissible. A blister even cannot be employed without danger. The powers of the system should be supported by nutritious but light aliment, wine, opium, and the mineral acids: and, when the tongue has become clean, and the heat and dryness of the skin have subsided, the Cinchona may be added with advantage. Previously, however, to the occurrence of these distinct indications for its employment, all the best writers concur in reprobating the introduction of the bark as injurious.—In both the anginose and malignant forms of scarlatina, acidulated and astringent gargles are found very serviceable. In none of them, should free ventilation be, on any account, neglected.

The *Morbid Consequences*, resulting from an attack of Scarlatina, may be either immediate or remote. Of the *former* kind, are the debility, invariably consequent on all acute diseases; and an oedematous swelling of the hands and feet and face;—which

very frequently succeeds Scarlatina in its severer forms;—and, in general, yields to the employment of purgatives, diuretic* and tonic remedies. The dropsy, in some cases, has been generally diffused over the body. In others, still more rare, the effusion has taken place into the cavities of the chest or brain and terminated fatally.

Of the *Remote Consequences* of Scarlatina, the most common are, organic diseases of the heart; and chronic inflammation of the membranes of the intestinal canal. The former, and invariably fatal, result is perhaps most frequently observed where, from any cause, the eruption has been suddenly or prematurely repressed: the latter, in cases where a predisposition to intestinal or glandular affections, or what is called the scrofulous diathesis, has previously prevailed. In most instances, overlooked or mistaken, the inflammatory state terminates in destruction of the bowel, and consequently of life. An interesting example of this kind fell, some years since, under the observation of the writer.† The practical inference to be drawn from a review of

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* Repeated purgatives of Calomel and Jalap, succeeded by large doses of Carbonate of Soda, or Super-tartrate, or Acetate, of potash, thrice a day, will in general soon reduce the dropsical swelling. The last-named salt is a very valuable although much neglected diuretic remedy.

† See *New Medical and Physical Journal*, Vol. X. p. 453. From subsequent reflection and experience, the writer is inclined to believe that the chronic inflammation of the descending colon formed, in this case, the primary, and the Peritonitis, a consequent affection.

such cases is most valuable and important:—Whenever, in young and delicate subjects, the decline of Scarlet-fever is followed by constipation, soreness of the bowels on pressure, and progressive weakness and emaciation of the muscular system, the existence of chronic inflammation in some portion of the intestinal canal may be at once suspected: and all the united energies of the patient and the physician should, forthwith, be employed to arrest and subdue this destructive process:—nor be suffered, for one moment, to flag until this object has been completely and permanently attained.

Measles, like the simple variety of Scarlet-fever is commonly an affection of mild character; and rendered dangerous only by the "officiousness of the doctor, or the interference of some stupid nurse." In the great majority of cases, nothing is required in the treatment of this disease, but abstinence from all solid and stimulating food, and confinement to a warm and equable atmosphere. On the decline of the eruption, however, the exhibition of an active purgative should not be neglected. It may be twice or thrice repeated at the interval of three days. From inattention to this simple expedient, especially in feebly-constituted children, a loaded state of the large intestine has sometimes resulted, and laid the foundation of chronic disease in that organ, and of the suffering and dangers attendant on it.*

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* A delicate and intelligent boy, aged 6, remained weak and irritable after re-

When death ensues during the invasion of measles, the fatal event is usually determined by conversion of the concomitant catarrhal affection into inflammation of the bronchia or lungs. In almost every case of this kind, the vigilant observer will be enabled to trace the unfavourable change to the improper employment of alimentary stimulants or a variation of temperature in the air respired by the patient. Oppression of breathing, accompanied by short dry irritating cough, and by sudden retrocession or fading of the rash, is the first and most prominent sign of this dangerous revolution in the disease. And it constitutes the most unerring criterion by which the subsequent progress of the case, and the chances of recovery, may be estimated. The gradual subsiding of this oppression, especially when accompanied or followed by re-appearance of the cutaneous eruption,

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covering from measles of ordinary character. No purgatives were, at that period, administered. Some weeks subsequently, the abdomen was found distended, sore on pressure; the intestinal evacuations scanty, offensive, and variously-coloured; tongue loaded; face wan, occasionally flushed; pulse rapid and thread-like; flesh flabby. Purgatives, alkalis, mild gelatinous nutriment, and gentle carriage-exercise, were prescribed. Under this plan, a marked improvement took place in the evacuations, tongue, appetite, and spirits. The tension of the bowels subsided; but the expression of the countenance continued bad: there was no effort at reparation on the part of the system; and pressure on the hollow of the left flank invariably gave pain. In this vacillating state, indulgence of the appetite, combined with undue muscular exertion, brought the disease to a crisis. Active inflammation of the descending colon was immediately developed; and, in a few hours, the poor child sank, exhibiting the most clearly-marked signs of intestinal gangrene.

may, in general, be confidently hailed as the harbinger of good.*

Inflammation of the bronchia or lungs, however, when arising in measles, is not usually attended with such violent re-action of the system,—such increased impetus of the heart and blood-vessels,—as usually characterize an attack of the same disease in a healthy subject, or under ordinary circumstances:—nor will it admit of the same activity of treatment, especially in the employment of blood-letting and purgatives.† Indeed, it sometimes happens, with weak or delicately constituted individuals, that, in this variety of pulmonary inflammation, the signs of general re-action are either obscurely marked, or altogether imperceptible. From the first hour of the pulmonary attack, the pulse, in such case, will be found weak, thready, and fluttering; the extremities cold; the face sunk and livid. Under this combination of unfavourable and embarrassing circumstances, blood-letting, even locally practised, or the exhibition of an active pur-

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* The catarrhal symptoms, which precede measles, sometimes assume the character of bronchial or pulmonary inflammation, or even of Croup itself. See "Cases," by Dr. Palmer, *Medico-Chirurgical Journal*, Vol. III. p. 457. Such conversions of the disease are frequently determined by exposure to damp or cold, during the eruptive stage; and will, in general, yield to the ordinary treatment. In these cases, the recession of the inflammatory symptoms is immediately followed by the appearance of the rash.

† In the case of a young gentleman, aged 20, who was attacked with violent pulmonary inflammation during measles, opium was administered with the most prompt and decided relief, when the impetus of the circulation had been reduced by a blood-letting of sixteen ounces.

gative, would almost infallibly extinguish life. Examples of this distressing error will probably, without the pain of a recital, suggest themselves to the experienced in the treatment of infantile diseases. Opium, and ammonia should be promptly administered,—blisters or mustard-poultices applied to the lower extremities,—in this perilous form of pulmonary inflammation; and the declining powers of the system be rallied, and sustained, by strong broth and wine. Of this bold deviation from the practice prescribed in the schools, and too often indiscriminately followed by the timid and unreflecting physician, experience has incontestably proved the safety and success.*

Affections of the brain, the heart, the lungs, or bowels are, in persons previously disposed from original conformation or the influence of moral or external circumstances to such diseases, frequently consequent on an attack of measles. Of these, the cerebral and intestinal affections are, perhaps, most

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* A healthy female child, of eighteen months, was seized, on the second day of the eruption of measles, with difficulty of breathing and slight cough. The rash immediately became indistinct. As the pulmonary symptoms increased in violence, the countenance grew pale and death-like, the pulse undistinguishable; hands and feet cold. Next morning the child appeared to be dying: several times, all external signs of animation were extinct. In these desperate circumstances, a blister was applied to the chest; hot flannels to the feet; and a little warm negus, with the occasional addition of small doses of tincture of opium and aromatic spirit of ammonia, administered every hour. The breathing was by these means soon relieved: towards evening, the child rallied; the extremities regained their warmth: the surface was covered with a genial moisture: the eruption reappeared: and no unfavourable symptom subsequently arose.

commonly met with. And, even when recovery is practicable, they often present a resistance to the efforts of medicine which the greatest activity or most determined perseverance will alone subdue.* When, therefore, upon the decline of the measles, or in a short time subsequently, head-ach, drowsiness, and disinclination for exercise are observed;—when distressing palpitation or tremor of the heart, especially in combination with oedematous swelling of the face and extremities, is complained of;—when dry cough and shortness of breathing exist;—or irregularity with tenderness of the bowels and progressive loss of flesh, is conspicuously marked, little discrimination

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* The most violent and unyielding case of cerebral congestion, ever observed by the writer, occurred in a Lady aged 20, on the decline of measles. The morbid condition had probably been aggravated by the employment of stimulating food and exercise, which an erroneous view of its nature had suggested. Unconquerable drowsiness, a sense of weight and heat in the head, inordinate throbbing of the carotid arteries, and coldness of the extremities, formed the most prominent signs. Blood-letting, rigorous abstinence, perfect repose, and purgatives, were prescribed on the writer's first visit. During the five weeks which succeeded, the patient was confined to bed in a retired and darkened room; had her head shaved; was fed upon tea, toast and water, and orange-juice; saw no human being except her nurse and medical attendants; and was bled from the arm, neck, and head, to the amount of more than three hundred ounces, ere the disease could be quite subdued. Such was the excitability of the brain even towards the close of the struggle, that paroxysms of intense pain and throbbing of the head resulted from the creaking of a boot upon the floor, and from the effort to masticate a piece of sea-biscuit. The patient was at length compensated for her admirable patience and fortitude by perfect recovery. Four years afterwards, she died from a similar attack with the precise circumstances of which the writer is not acquainted. In another severe form of congestion of the brain consequent on measles, but marked, from the commencement, with great depression of the vital powers, the subject may very frequently be rescued from impending death by the application of a blister to the head, and a vigorous employment of Calomel and Ammonia.

will be necessary to discover that one or other of the organs enumerated above, has become the seat of a morbid affection: and little experience requisite to foresee that by the most vigilant judicious and persevering attention alone, the health or existence of the patient can be preserved.

As difficulty is sometimes experienced, especially by the young practitioner, in distinguishing the eruption of Scarlet-fever from that of Measles; and as the treatment required by the two diseases, in their severer forms, is very different; it may not be unprofitable to trace briefly a parallel between them.*

The eruption, in *Scarlet Fever*, first appears about the second day from the commencement of the indisposition, and the fourth or fifth from the period of exposure to the infection. That of *Measles*, on the fourth day of the fever, and the twelfth or fourteenth from the date of exposure.

In two of the varieties of *Scarlet Fever*, the throat is invariably affected; but there are none of the catarrhal symptoms,—as sneezing, redness of the eyes, irritating discharge from them and from the nostrils, hoarseness and cough, which almost invariably usher in *Measles*. The throat, in the latter affection, some-

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* See, on this subject, Dr. Willan, *On Cutaneous Diseases*, 4to. London, 1808; —Dr. Bateman's *Practical Synopsis of Cutaneous Diseases*, 8vo.;—and Rayer's *Traité Théorique et Pratique des Maladies de la Peau*, 2 Vols. 8vo. with Engravings. Paris, 1826. The latter work is quite worthy of being associated with its two valuable predecessors.

times exhibits a slight degree of soreness; but this commonly subsides as the rash is developed.

The character of the eruption, in *Scarlatina*,—is that of small red points succeeded by large bright scarlet spots which become confluent; cover the skin with a diffuse efflorescence; and terminate by desquamation, about the sixth day.—The eruption of *Measles*, on the contrary, consists in distinct, red, and nearly circular spots which resemble flea-bites. Some of these spots coalesce, and assume a semi-circular or crescent shape, interspersed with the circular dots and with patches of healthy skin. The eruption is less vivid than that of Scarlatina, and gradually declines on the fourth day from its appearance.

In addition to these diagnostic signs, it may be mentioned that, during the eruption of *Scarlatina*, the tongue is covered with a white fur, through which the red points of the papillæ are frequently discernible; and that it subsequently acquires, from separation of the epidermis, a vivid-red colour. No such appearance is exhibited in *Measles*. Nor is the latter succeeded by the oedematous swellings which mark the decline of the severer forms of Scarlatina.

By Dr. Willan, and his friend and successor Dr. Bateman, a variety of Measles has been described which is destitute of catarrhal symptoms; and hence designated by the title of *Rubeola sine catarrho*, (Measles without catarrh.) No clearly-marked instance of this affection has come within the writer's

observation. The French physician,* whose opinions are entitled to great attention, questions its existence, and suspects that a modification of Roseola or Erythema may have been mistaken for it. This inference derives some probability from the acknowledged fact that an attack of the eruption described by Dr. Willan, does not secure the patient from a subsequent invasion of common Measles.

Hooping-Cough† presents a subject of the deepest interest. Until within the last fifteen years, no physician could approach it without a humiliating sense of timidity and indecision. Since then, however, the obscurity in which it long lay involved, has

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* See Rayer, *Work quoted*, Vol. I. p. 22.

† In this sketch, the terms, ***Hooping-Cough*** and ***Chincough***, will be indiscriminately employed. They are both objectionable: the first, as expressive of a morbid sign which does not invariably exist;—the second, as implying that the attacks of the disease are exclusively confined to childhood: for the *chin* is evidently only a vulgar corruption of the Saxon term *Kind, a child.* The principal authors who have investigated Chincough by dissection, and whose writings, therefore, possess a sterling value, are Watt, *Treatise on the History, Nature, and Treatment of Chincough*, 8vo. Glasgow, 1813;—Marcus, *Traité de la Coqueluche ou Bronchite epidemique* (translated by Jacques from the German original, Bamberg, 1816) 8vo. Paris, 1821;—Guibert, *Recherches Nouvelles et Observations pratiques sur le Croup, et sur la Coqueluche*, 8vo. Paris, 1824;—and Desruelles, *Traité de la Coqueluche*, 8vo. Paris, 1827.—Interesting facts and opinions on the subject, may also be gleaned from the following sources: Alber's German *Translation* of Dr. Badham's work, entitled *Versuch über die Bronchite, &c. mit einer Vorrede;*—Laennec's celebrated *Traité de l'Auscultation médiate*, Paris, 1826;—Fourcade-Prunet's *Maladies nerveuses des Auteurs, rapportées a l'Irritation de l'Encéphale*, Paris, 1826;—Pearson's American *Dissertation on Chincough*, 1826;—Begin's *Traité de la Therapeutique*, Paris, 1825;—Mr. Alcock's very valuable "Observations," *Medical Intelligencer*, May—June, 1820;—Guersent's Article in the *Dictionnaire de Médecine*, Vol. VI; and Webster's, in the *Medical and Physical Journal*, December, 1822.

been gradually disappearing before the light of morbid anatomy. And the time is at length arrived when this singular affection, once the opprobrium of Science and the strong hold of Empiricism, may be traced with the same clearness, investigated with the same precision, and treated with as much success, as any other equally formidable disease from which the human system is prone to suffer.

In discussing a controverted subject, the admission of negative evidence is often useful;—always unobjectionable. It restricts within more narrow limits the ground of investigation; and may, to a certain extent, supply the defects of positive testimony. On this principle, ere an attempt be made to shew what Hooping-Cough really is, its non-identity with diverse morbid affections, for which it has been mistaken, may be cursorily established; and the road to truth be cleared by demonstrating that this disease does not possess the seat and character which have commonly been assigned to it.

Hooping-Cough is not, then, essentially a febrile affection: for thousands of children have passed through the disease, amid frequent and severe paroxysms of the cough, without exhibiting the slightest febrile heat, or perceptible derangement of the circulating system.—It is not simple inflammation of the larynx, windpipe, or bronchia. This is proved by the frequent absence of all febrile excitement; the immunity from suffering and disorder in the intervals of the paroxysms; and by the fact that nei-

ther laryngeal, croupy, nor bronchial inflammation exhibits the peculiar phenomenon which characterizes Hooping-Cough, and from which its popular designation has been derived.—It is not inflammation of the substance or external membrane of the lungs: for when, during the existence of Hooping-Cough, Pneumonia or Pleurisy has supervened, the leading phenomenon of the original disease has at once disappeared, and the character of the symptoms been entirely changed. And in cases of recovery from such inflammation, the recurrence of the hoop constitutes one of the most unerring signs by which the subsidence of the inflammatory process is announced.—It does not consist, as some writers have recently asserted, simply and originally in an affection of the brain: since the catarrhal invariably precede, in their development, the cerebral symptoms; and the latter are sometimes, even in severe cases of Hooping-Cough, so slightly marked as to elude the eye of all but the most vigilant observer. That the brain, however, exercises an important influence in the production of the peculiar character, and in the sustenance, of the disease, will hereafter be clearly shewn.—Hooping-Cough, lastly, does not arise from those prolific sources of all modern disorders, the stomach and bowels: although it is often connected with, and sensibly aggravated by, derangement of these organs; and the injuries which they sometimes sustain in the disease, are sufficient, of themselves, to destroy life. Proof of the correctness of

this assertion is supplied by the fact that, in simple hooping-cough however violent, the tongue will often remain clean, the appetite unimpaired; and the bowels continue to act with nearly the wonted regularity throughout the whole course of the disease. The frequent occurrence of vomiting towards the close of the paroxysm may at first sight be deemed subversive of such inference. But the objection vanishes on closer scrutiny. For in this case, the vomiting is an almost purely mechanical effect. It results from the pressure of the abdominal muscles and diaphragm excited to extraordinary action by the violent efforts of coughing, on the distended stomach.*

The negative evidence respecting the seat and nature of Hooping-cough thus briefly discussed, all the positive testimony calculated to expose its real character, must be next examined. And as the Zoologist or Mineralogist, anxious to acquire correct notions of any object of natural history submitted to his examination, is accustomed to survey it in a simple form and uninfluenced by adventitious circumstance or combination; so should the Medical Philosopher, in attempting to fix the essential characters of a disease, view it in the most perfectly insulated state, and dissevered from all the morbid affections

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* Desruelles states his opinion that the nausea and vomiting which accompany the paroxysm of chincough, are determined by the "cerebral influence on the gastric branches of the eighth pair of nerves." *Work quoted*, p. 91.

with which it may be complicated; and by which, obscured. From neglect of this obvious principle, Hooping-cough, like Angina Pectoris,* and several other diseases, has been involved in deeper obscurity by the efforts intended for its elucidation: until its literary history presents a mass of contradiction at which the spirit, thirsting for information, sickens and recoils. By the adoption of this process, a gleam of light may be thrown upon the darkness; and the rudiments of order at least be introduced into this chaos of conflicting testimony and opinion. Hooping-cough will, therefore, be first examined in its aspect of greatest simplicity; and afterwards in its various complications, and consequences immediate and remote. In support of the inferences cautiously deduced from this survey, the writer may not only expose the facts and opinions of the few modern authors who precisely concur in his views of the question; but even confidently appeal to the evidence supplied by others who did not entertain them; or unwittingly brought forward in direct opposition to these views.

Hooping-Cough, in its simplest form, ordinarily

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* Many obscure and dissimilar affections of the heart, lungs, and even abdominal viscera have hitherto been confounded, in practice, under this vague and objectionable name. In a subsequent part of the present work, an attempt will be made to unravel the confusion, and point out the diagnostic signs of the disease in its simple form, and various complications. The characters of the uncomplicated affection are very clearly exposed, by the lamented Allan Burns, in his valuable *Observations on Diseases of the Heart.*

commences with all the signs of common catarrh After a period variable in duration, its characteristic phenomenon, the Hoop, is developed. If the patient be previously free from disease or morbid predisposition, and the season of year favourable, the affection will interfere but little with his occupations or amusements. In the intervals between the paroxysms of the cough, he complains only of occasional head-ach or drowsiness; and exhibits no symptom except slight prominence and heaviness of the eye. The paroxysm, if long and violent, is frequently followed by ejection of the contents of the stomach, and sometimes by a gush of blood from the nostrils.— Both these modes of evacuation, especially the latter, are productive of signal relief.* There is neither febrile heat nor thirst. The pulse, except during the shock of the paroxysm, is not accelerated. The bowels usually become torpid; and the secretion of urine scanty.

If the disease be not exasperated by any act of imprudence or bad treatment, no interference of art will be required. After having run a certain course, it will spontaneously subside. In the children of the more opulent, the period of recovery is often accelerated by the application of a pitch-plaster, or other

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* It is worthy of particular remark, as elucidating the influence of the brain on the respiratory organs in chincough, that not only the signs of the cerebral congestion, but the violence of the cough itself, are conspicuously moderated by the nasal hemorrhage.

stimulating remedy, to the spine, or by removal to a purer atmosphere. The illustration, by particular examples, of this simple form of Hooping-Cough, its progress, popular treatment, and issue, would be superfluous. They are every where to be seen. If then the preceding description be correct;—if it apply to the majority of cases which occur in this country,—the inference will be at once obvious: Hooping-Cough is not essentially a febrile affection.

But when the patient possesses an irritable or delicate constitution, or evinces any marked predisposition to disease;—when the situation where he resides, or the season at which he is attacked with Hooping-Cough, is unusually damp, or cold and variable, and sufficient precaution is not employed to protect him from its influence or vicissitudes,—the disease will often become complicated with, or converted into, other morbid affections. Of such complications and conversions, the principal are active inflammation of the air-passages or lungs, and congestive or acute diseases of the brain. And all these are, in general, accompanied by fever, not purely inflammatory, but of a low type, and consequently marked, in its progress and close, with the usual signs of extreme debility and exhaustion.

The *Inflammation of the Air-passages* may assume two well-defined varieties of external character. By the observant Dr. Watt, they were distinctly recognised in the cases of his unfortunate children. In one of these varieties, the membrane of the larynx

and superior part of the windpipe seems to be originally or principally affected. Great difficulty, from tumefaction of this membrane and consequent diminution of the aperture of the glottis, is experienced in respiration; and the hoop continues. It is, in fact, an admixture of a croup-like affection with low fever.* The inflammation, in the other variety, is exclusively or chiefly confined to the lower portion of the windpipe and the bronchial tubes. There is no hoop. The air enters with facility into the lungs; but respiration is performed with a convulsive effort. It is bronchial inflammation complicated with synochus.† The immediate cause of death, in both varieties, is evidently effusion of mucus into the air-passages; producing suffocation, or fatal torpor of the heart or brain by exclusion of the pulmonary blood from the vivifying influence of the external air.‡ The state of the tongue, the extreme languor,

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* A striking illustration of it is afforded by Dr. Watt's Second Case. *Treatise*, p. 123.

† It is exemplified in the First Case detailed by Dr. Watt; and in the subject of the slight notice immediately following. *Treatise*, p. 103—122.

‡ Dr. Watt distinctly notices the dark colour of the blood drawn in the acute Bronchitis consequent on Chincough; and thence infers the existence of an affinity between it and Typhus. *Treatise*, p. 120. And the Reviewer of his work, *New Medical and Physical Journal*, Vol. VII. p. 165,—inquires whether the singular condition of the blood may not be attributed to the conjoined influence of disordered respiration and the morbid state of the mucous membrane rendered impervious by effusion into the air-cells and bronchia, and thus obstructing the access of atmospheric air to the blood of the pulmonic vessels.—Mr. Alcock too, in adverting to the state of the bronchial membrane in measles, and the filling of the air-passages with mucus, asserts that these morbid conditions may prevail so far

loss of muscular power in the extremities, and stupor in the intervals of the paroxysms, observed in these cases, unquestionably indicate a loaded state of the cerebral vessels, as it commonly existsi n low, or, as it is by some designated, nervous fever.

In children predisposed to the invasion of acute pulmonary diseases, *Inflammation* sometimes attacks the *External Membrane*, but more frequently the *Substance, of the Lungs*, during the prevalence of hooping-cough. Here the hoop disappears; and the characters of the original disease are lost in the consecutive affection. The fatal issue is commonly determined, in the first case, by effusion of pus or serum into the chest;* in the latter, by the intensity of vascular re-action, and consequent exhaustion of the vital powers, or abscess.† The recurrence of the

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as "to prevent the oxydation of the blood and consequently to destroy life." *Medical Intelligencer*, No. VIII. p. 197.—That the mucous exudation, consequent on the inflamed state of the respiratory membrane in active Bronchitis from Chincough will explain, on this principle, the discoloration of the blood and loss of muscular power, which so strongly arrested the attention of Dr. Watt; and the stupor frequently observed in this disease, no one who has deeply reflected on the subject, will deny. Yet, in the present imperfect state of pathological knowledge, it would, perhaps, be unsafe to refer the severer symptoms and fatal issue of Measles, Scarlatina, and Small-pox, to a similar cause. Mr. Alcock, however, is entitled to great credit for having so ably directed the attention of professional men to this important and neglected subject.

* In one of the cases recorded by Marcus, the pleura and pericardium were found slightly inflamed: and in another, by Guibert, the pleura is described as red, thickened, and covered with false membrane; and two pints of pus were effused into the left cavity. The existence of extensive pleuritic adhesion is sometimes observed in pulmonary inflammation consequent on chincough.

† See the cases detailed by Dr. Watt, at p. 159,—177,—and 180, of his *Treatise*.

hoop may, generally, be hailed, in this variety of pulmonary inflammation, as an auspicious sign. The characters of the disease, it may be remarked, are not so active and prominent in this as in ordinary cases of inflamed lung; nor will it require, or admit of, the same energy in the employment of depleting remedies. It may be regarded rather as a conversion than a complication of Hooping-cough.

Drowsiness, languor, and diminished sensibility to external impressions; and violent pain with increased heat of the head, inordinate pulsation of the carotid arteries, and all the other signs of excessive determination of blood to that region, signalize the perilous *Congestion of the Brain;* and the more *Acute Cerebral Affection,* with which Hooping-cough is sometimes complicated. These violent cerebral complications are most frequently observed in large-headed and intelligent children. They terminate fatally by apoplexy, or stupor and convulsion. After death determined by the former, extravasation of blood upon or within the substance of the brain will be discovered:*—by the latter, a loaded condition of the blood-vessels, or membranous inflammation and effusion of serum into the cavities, of the organ.†

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* This is a termination, of rare occurrence. No instance of it elucidated by dissection, exists in the various works which the writer has consulted.

† See Dr. Watt's Third Case, *Treatise,* p. 141. The child died from epilepsy, after lying in a torpid state; with lividity of the lips and extremities. "The veins over the surface of the brain were very turgid." In another child destroyed by

There is yet another striking variety of the cerebral complication of Hooping-cough, which requires a transient notice. In this, the affection of the brain, constantly although less conspicuously marked than in the preceding, induces neither apoplexy nor convulsion. The patient has to struggle against,—and usually sinks under,—a complication of synochus with hooping-cough. Instances of it are not uncommon. It most frequently occurs in the dwellings of the poor, during seasons and under circumstances favourable to the development of low fever.*

Such are the affections most frequently complicated with, or directly consequent, on chincough.† To the common neglect of not separating and distinguishing these from the disease in its simple and original

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epilepsy during chincough, *Treatise*, p. 156,—"the veins on the surface of the brain appeared to be remarkably distended with a very dark-coloured blood." See also the Cases by Desruelles, *Traité*, p. 139,—142; and that recorded by Guibert, *Recherches*, p. 214. Death by stupor or convulsion is a very common occurrence in chincough; but the fatal event is often referred to a pulmonary or intestinal source: and the condition of the brain therefore neglected or superficially examined. Whenever these signs have preceded death in chincough, cerebral congestion or effusion will most certainly be discovered on careful inspection.

* See a Case detailed in the *New Medical and Physical Journal*, Vol. VIII. p. 198.

† Acute intestinal affections sometimes supervene and destroy life in Hooping-Cough. This "Gastro-bronchial Inflammation" is well exemplified by the Cases given at p. 217, and 220, of Guibert's *Recherches*. It is, however, a more rare complication than the others which have been described. Ulcerations of the intestinal mucous membrane most frequently occur in combination with abscess, or tubercles, of the lungs.—Inflammation of the internal membrane of the heart and aorta is also stated by Guibert to have existed in a Case where measles succeeded chincough. The bronchial membrane was here slightly inflamed; and the "bronchial divisions rather larger than ordinary."

form, all the strange diversities of opinion which have prevailed respecting its nature, and the fatal errors committed in its treatment, may be clearly ascribed. And no fact in the progress or termination of Hooping-cough has been observed;—no view, at all correct, of its character been taken;—no remedy opposed with success to its ravages,—which, however apparently inconsistent and contradictory, may not be reconciled by this rigorous analysis, and the consequent tracing of the disease to its real source.

Hooping-Cough consists originally and essentially in a local and probably specific* inflammation of the membrane of the air-passages. It speedily becomes complicated with cerebral congestion; and then assumes the convulsive character. During the violent paroxysms of the cough, the blood is propelled in undue quantity and with increased impetus to the brain; and the irritated and loaded organ re-acts with augmented violence on the local malady.† Numer-

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* The specific character of the bronchial inflammation in chincough is denied by writers, of great authority. Yet when the circumstance of its attacking an individual only once during life is recollected; and the clearest evidence of its occasionally infectious nature may be adduced; the consistency of such an opinion with these facts becomes somewhat incomprehensible.

† The following Extract from the work of Desruelles; which the present writer had not seen until long after this portion of his subject was arranged for publication, exhibits such a remarkable coincidence with his opinions respecting Chincough, that he cannot resist the temptation of transcribing it:—"Chincough is, in fact, only Bronchitis complicated with cerebral irritation. The inflammation of the bronchia is always primitive; the irritation of the brain, consecutive. While the bronchitis is simple, the cough exhibits nothing peculiar; but when the diaphragm and respiratory muscles, and those of the glottis and larynx,—are drawn

ous facts in the history of Chincough are illustrated by this view. Of these, the most striking are,—the absence of the convulsive character in the other inflammations of the air-passages not complicated with cerebral irritation:—the existence of the cerebral symptoms invariably observed in even the mildest form of chincough:—the frequency of nasal hemorrhage; and the marked relief of the bronchial affection resulting from it:—the notorious tendency of the brain to active disease in hooping-cough; from which some writers have been led erroneously to infer that the latter is simply a cerebral affection:—and, lastly, the maintenance of the convulsive character long after every trace of the original inflammation of the respiratory membrane has disappeared;* and the final removal of the disease, at that period, by spinal irritants, powerful moral impressions, or other agents which can exert no direct influence upon the bronchial membrane, or on any other organs, except the spinal marrow and the brain.

Hooping-Cough, in its more simple form, rarely

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into spasmodic action under the influence of the cerebral irritation, the cough changes its character and becomes convulsive." *Work quoted*, p. 77.—Hence the French writer proposes to designate this disease, *Broncho-Cephalitis*.

* This clearly explains one of the sources from which error has arisen in investigations of the Morbid Anatomy of Chincough. A child is destroyed by an affection of the brain, connected with the disease in its latter stages; and consequently after every visible trace of the bronchial inflammation has disappeared. On dissection, the bronchial membrane is found in a natural condition: and hence an apparently correct although erroneous inference may be drawn that a morbid state of this membrane constitutes no essential character of Hooping-Cough.

destroys life.* Dependent like many other convulsive affections, upon increased activity or fullness of the vascular system, it will yield with equal facility to abstinence and depleting remedies. When complicated, however, with acute affections of the brain, extensive irritation of the bronchial membrane or the bowels, or converted into pulmonary inflammation, it acquires at once a formidable and often fatal character; and will demand, with great vigilance and energy, a variation of practice precisely corresponding with such change. It should never be forgotten that the treatment of chincough must be governed, not by the name, but by the circumstances of the disease, and by the peculiar nature and severity of its various complications.

The *Remote Consequences* of Hooping-cough are most commonly morbid affections of the lungs, heart, and various portions or appendages of the intestinal canal. They do not materially differ in character or termination from similar diseases of the respective organs induced by other causes.

In young and delicate subjects originally prone to the formation of tubercles, *Pulmonary Consumption* is

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* Children are said by Desruelles, *Traité*, p. 130—to have sometimes died from spasmodic contraction of the glottis, and consequent suffocation, during a violent paroxysm of chincough. In the absence of all specific assertion, however, the event may be regarded as very uncommon. "Chincough," he subsequently adds, p. 164, "is not itself fatal. This unfortunate issue is always the result of acute Phlegmasia of the brain and its membranes, or of inflammation of the lungs and intestinal canal."

a frequent consequence of chincough. Like Measles or other severe disease, it operates by awakening into activity a dormant predisposition. Under circumstances favourable to their development, symptoms of Consumption will sometimes be observed from the commencement of Chincough.

Organic Disease of the Heart, although less frequent, is not rare. Obstruction of the blood in the right cavities of the heart, from the gorged state of the pulmonary vessels, or from sudden and frequent disturbance of the circulation during the violent paroxysms of the cough, may be regarded as its immediate cause; and dilatation of the cavities of the organ, one of its most common forms. It is frequently neglected or mistaken in its origin; and sometimes aggravated by improper treatment. At a more advanced period, however, the phenomena which it presents, independently on the dropsical symptoms forming its usual complication, become so strongly marked as to obviate the possibility of continued error. Its termination is, of course, invariably fatal.*

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* A thin delicate-looking boy was seized, on recovery from severe chincough, with shortness of breathing, violent palpitations of the heart, and occasional spitting of blood. Attributed to debility, these symptoms were only exasperated by the active exercise and nutritious diet which such views naturally suggested. He now came under the writer's observation: and the following are the symptoms which the boy exhibited in March, 1824. Pulsations of the heart unusually strong, extensive, and irregular, but not intermittent; stroke of the artery at the wrist small, fluttering, variable;—of the carotid, full and throbbing; an undulating motion in the external jugular vein; sound of the chest obscure, especially in the region of the heart; respiration quick, and distressingly hurried by exercise or

Dropsy of the pericardium is also discovered in the majority of cases of death during chincough. The unfortunate issue is probably sometimes determined by this effusion. The mode of its production is not evident.*

Chronic Inflammation of the Mucous Membrane of the Bowels, with *Induration and Enlargement of the Mesenteric Glands,* occasionally terminating in *Ulceration or Abscess,* and *Morbid Alterations of the Liver and Spleen,* are no uncommon consequences of severe or protracted Hooping-cough. Of these consecutive affections the eleven histories reviewed by Dr. Watt

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mental emotion; cough hard, frequent, harassing, invariably provoked by deep inspiration; the secretion from the bronchia expectorated with difficulty, and occasionally streaked with blood; skin warm and dry; appetite keen; thirst urgent; bowels torpid; urine scanty; cheeks and ankles slightly oedematous; reclination on the back alone practicable. The case was at once pronounced to be dilatation of the heart, with congestion of the lungs; and its fatal termination in dropsy predicted. Warm air, repose, abstinence, purgatives, and diuretics especially the Foxglove, were prescribed with great benefit. The cough, hemorrhage, and œdema, nearly disappeared during the summer; and the palpitations were slighter and less frequent. As autumn approached, all the symptoms recurred in an aggravated form. The pulsations of the heart became so violent as to be visible at a great distance from the sofa on which the poor boy reclined. General dropsy succeeded; and, towards the close of the year, the painful struggle terminated in death.

* In six of the eleven cases of dissection described or collected by Dr. Watt, the existence of this curious complication is expressly noticed; and in two of the remaining five, the state of the pericardium is not mentioned. The large quantity of fluid freqnently discovered, militates against the supposition that it is merely the effusion which takes place in death from other causes: while the usual absence of all the signs of Pericarditis, and the limpid colour of the serum, concur to shew that it cannot be the product of inflammatory action. May it not arise from the obstructed circulation of the coronary vein, consequent on the gorged state of the pulmonary cavities, of the heart in chincough? This, let it be remembered, although certainly plausible, is, at present, mere hypothesis.

present several examples. It is highly important that, in all such cases, the existence of the disease should be detected at its commencement; and by cautious examination of the abdomen and occasional inspection of the evacuations, the requisite knowledge may, in any given instance, be with great certainty acquired. At that period alone, can a plan of treatment be instituted with confident prospect of success; and the vigilance of the physician will often be rewarded by the rescue of his patient from the miseries of a painful, or hopeless, and protracted struggle.

To render the preceding sketch of Chincough as perfect as the restricted objects and limits of a Popular Essay will allow, the Treatment of the disease, its complications and consequences, will now be cursorily reviewed. This object may be most conveniently attained by discussing in succession the principal remedies which have been employed in Hooping-Cough; and determining their precise value, and the peculiar cases and circumstances of the disease, to which they are respectively applicable. Of these remedies, Blood-letting, Counter-irritants, Emetics, Purgatives, Diuretics,—Alkaline, Narcotic, and Tonic Agents,—Temperature, Change of Air, and Diet, —will alone require a brief examination.

Blood-letting is either general or local. In the first, blood is drawn from a large vein, usually of the arm: in the latter, from the minute vessels of the skin by leeches or cupping. But in affections of the brain,

or diseases complicated with cerebral congestion, the advantages of both may be combined without the loss of strength attendant on the one,—or of time, upon the other,—by abstraction of blood from the temporal artery or external jugular vein. For obvious reasons, this operation will frequently be entitled to preference in the severer forms of disease complicated with Chincough.

General blood-letting is not usually indicated in simple Chincough. Application of leeches to the throat and occiput or temples will almost invariably suffice to mitigate the signs of local inflammation, and avert the assumption of its more active character.* But when the brain becomes greatly loaded and oppressed; when pulmonary hemorrhage or any symptom, indicative of impending or actual inflammation of the bronchia or lungs appears, local depletion must no longer be relied upon. In either of these contingencies, the method of abstraction, just recommended, will afford far more prompt and permanent relief than common blood-letting. Even when for the relief of active disease in the lungs or pleura, the topical loss of blood becomes necessary, it will be taken with greater advantage posteriorly between

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* Abstraction of blood from the head by leeches appears to have been prescribed by Desruelles, with most striking benefit, in the severer forms of simple chincough and in some of its complications. The experience of the writer is equally favourable to this remedy. In several cases of recent occurrence, the bronchial symptoms have been directly relieved, and a menaced extension of the inflammatory action evidently averted, by it.

the shoulder-blades than from the anterior region of the chest: for, while relieving the lungs, abstraction, thus practised, will, at the same time, unload the vessels of the spinal chord; and, indirectly, those of the brain continuous with it.* The exhaustion which occurs towards the close of the severer complications of chincough should, however, be constantly recollected. Such provident anticipation will prevent the abuse of this most valuable remedy in the earlier stages of the disease. At a more advanced period, even a moderate blood-letting may be destructive.†

Counter-Irritants, as blisters, antimonial, and other stimulating agents, are invariably serviceable in simple Chincough. Popular experience has, however, long since discovered that such remedies produce greater benefit when employed on the spine than on any other part. The celebrity acquired by certain empirical‡ remedies is alone explicable on this prin-

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* This observation holds equally good, with respect both to blood-letting and blistering, in those cases of common inflammation of the lungs or pleura, where cerebral congestion has existed from the commencement; or the brain has subsequently taken the alarm, and re-acted on the pulmonary disease.

† Violent pulmonary inflammation, consequent on chincough, attacked a girl, aged 4, in the spring of 1810. The difficulty of breathing was so urgent as to menace suffocation. Leeching and blistering had been tried without relief. Four ounces of blood were therefore taken from the arm: and, ere the bandage could be adjusted, the child died.

‡ As Roche's Embrocation; the active ingredient of which is Antimony, the Cantharis, or other powerful stimulant. Dr. Sanders, of Edinburgh, to whom the profession is so deeply indebted for the light which he has thrown on diseases of the cerebral mass, is said to treat chincough principally by spinal frictions. According to the writer's experience, these remedies operate with greater certainty

ciple. And the fact may be regarded as affording strong collateral evidence that chincough is essentially connected with a morbid condition of the cerebral mass. In complications of this disease with acute affections of the bronchia or brain, the application of blisters to the spine or head must, in general, be preceded by blood-letting and intestinal evacuants. Where extreme debility or exhaustion occurs, unaccompanied by decided signs of local inflammation or congestion, the irritation and loss of power consequent on blistering, may prove injurious. In this case, however, as in simple chincough, benefit may result from the application of a stimulating plaster between the shoulder-blades.

An *Emetic* should usually be given at the onset of this as of many other diseases. In simple Chincough, where expectoration is difficult, or vomiting does not spontaneously occur at the close of the paroxysm, this evacuant may be prescribed, and occasionally repeated, with signal relief. But in acute affections of the respiratory organs or brain complicated with hooping-cough, or in the exhaustion which frequently marks their close, the operation of an emetic would infallibly aggravate the pulmonary or cerebral irritation; or produce fatal expenditure of the already sinking energies of life*.

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at the period when the more active bronchial symptoms have subsided; and the disease has consequently assumed its purely convulsive character.

* The injurious consequences of the indiscriminate prescription of Emetics, in chincough, and especially in its cerebral complications, are very strongly insisted upon by Desruelles.

Torpor of the bowels is an almost invariable attendant upon Chincough under every variety of circumstance and complication. There exists no symptom in the removal of which, greater difficulty is usually experienced. *Drastic Purgatives*, the most powerful, frequently fail of effect when the oppressed state of the brain has not been relieved. This done, a mild and simple aperient will obtain evacuations which the severest remedies previously administered, had not been able to provoke. Paradoxical as it may appear, blood-letting and blistering constitute in this, as in paralysis and many other cerebral affections, the most effective intestinal evacuants.* Depletion, under such circumstances, probably operates by unloading the brain, and thus restoring to the intestinal canal its interrupted supply of nervous power. However this be, the fact is incontrovertible. In a tone of amusing simplicity and wonder it has been noticed by Dr. Watt; without any attempt at explanation. Looseness of the bowels, occurring in the earlier stages of simple chincough, will mitigate the severity, and shorten the duration, of the disease. Such a symptom, in the concluding stage of its complication with low fever, must obviously be unfavourable; and the involuntary discharge of feces generally fatal.

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* There are many morbid affections essentially dependent on, or connected with, cerebral congestion; in which no purgative will operate with certainty or effect, until the vessels of the brain have been unloaded. This is a practical truth as valuable as generally unknown.

The inactivity of the kidneys observed in Chincough is probably explicable on the same principle as that of the bowels.* The violence of the paroxysm and the oppression of the brain will, at all events, be more strongly-marked in proportion to the greater scantiness of the urinary secretion. The cases, recorded by Dr. Watt, may be cited in confirmation of this fact; and common experience attests its accuracy. The relief consequent on an increased flow of urine, could not long escape observation. This suggested the employment of various *Diuretics*, and particularly the internal use of the Cantharis, in Hooping-Cough. The success is clearly shewn by the prevalence of the practice. When acute diseases of the breast or brain are complicated with chincough, or even when the occurrence of such complication is menaced, the exhibition of an active stimulant like the Blistering-fly, would be obviously improper. But in simple Chincough, or in cases where the disease, after reduction of the inflammatory symptoms, has resumed its simple character, the remedy may be administered with perfect safety and success. The most admirable effects will result from a combination of Tincture of Cantharides with other stimulants and tonics in the exhaustion which sig-

* Scantiness of urine forms a prominent and unfavourable symptom in divers cerebral diseases. It not only indicates great disturbance of the brain; but the existing morbid state is much aggravated by the failure of the wonted excretion. Total suppression of urine, dependent on cerebral congestion, is almost invariably the precursor of fatal apoplexy.

nalizes the latter stages of the acute affections frequently complicated with Chincough.

Alkaline Remedies will generally be found serviceable in simple Hooping-cough. They correct the disposition to acescency of the food which often prevails in this disease; and obviate the distension of the stomach by which the cough is excited, and the violence of its paroxysm invariably aggravated. They, moreover, operate beneficially by stimulating the kidneys to increased action. In the severe and active complications of the disease, they must commonly yield to, but may sometimes be judiciously combined with, more powerful agents.

*Narcotics,** among which Opium occupies a pre-eminent rank, are not generally applicable to the treatment of simple Chincough. While tranquillizing the cough, they sustain or aggravate that loaded condi-

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* Among the Narcotics and Sedatives, in addition to opium, may be enumerated the Extracts of the *Papaver somniferum*, *Atropa Belladonna*, *Hyoscyamus niger*, *Conium maculatum*, *Datura stramonium*, *Lactuca sativa*, and *Aconitum napellus*; and the *Hydrocyanic Acid*. Of all the preparations of *Opium*, the *Liquor sedativus*, the *Acetate of Morphia*, and the celebrated "*Black Drop*," are perhaps entitled to preference, in Chincough; as not inducing the constipation and stupor which succeed the employment of Opium itself. The *Belladonna*, from invariably deranging the functions of the brain, is far less eligible than the *Hyoscyamus* or *Conium*. Its use is strongly denounced by Desruelles. In the sedative properties of the *Stramonium* and *Lactucarium* (See the late Dr. Duncan's *Observations on Pulmonary Consumption*, 8vo. Edinburgh, 1813), the present writer has been disappointed: in those of the *Aconite*, he is without experience. For reasons which they who are acquainted with the operation of *Prussic Acid*, on the brain and spinal marrow, will at once descry, it appears peculiarly entitled to trial in cases of Chincough, requiring a sedative remedy.

tion of the brain which essentially exists with it; and increase the natural tendency to constipation of the bowels. Thus, temporary relief is purchased at the expense of consequent suffering. In those instances of more active cerebral disease which have already been described, the employment of Opium must obviously be inadmissible. But great benefit will result from its use, after due depletion, in the acute bronchial and pulmonary affections connected with chincough. And the restlessness and languor which mark the close of a protracted struggle; will be conspicuously relieved by the influence of opiates; especially if it be accompanied with exhausting diarrhoea. To the external application of liniment or plaster of opium there can exist no objection in any stage or variety of Hooping-cough.

For reparation of the loss of power sometimes observed in the latter stage of simple Chincough, and always at the close of the active periods of its different complications, *Tonic Remedies* may be employed with excellent effect. The period for their administration will be here, as in common low fever, correctly indicated by the condition of the skin and tongue. Of these remedies, the Cinchona-bark and the invaluable Sulphate of Quinia which it affords, preparations of Iron or Zinc, combined with Cantharides, exposure to fresh air, and cold ablution, are best entitled to confidence.

Nothing in the Treatment of Chincough has given rise to greater diversity of opinion, than the *Influence*

of Temperature. By some physicians, respiration of warm air is, in all cases, confidently enjoined: others as zealously and indiscriminately recommend exposure to a cold atmosphere. Many, again, confounded by the very opposite effects which temperature has produced upon different cases of chincough; and disinclined from mental constitution or habit, to trace the apparent incongruities to their real source, have boldly pronounced it an object of utter indifference. These discrepancies are more easy of reconciliation than may, at first sight, be imagined. The regulation of temperature, like the prescription of all other remedies in Chincough, should be governed by the precise variety of character and complication which the disease, in any individual case, assumes: for a condition of the atmosphere, correctly applicable to to the treatment of one stage or variety of the affection, will be equally injurious in others. Thus, in simple Chincough, of common severity, free exposure to the air is salutary: provided the situation and season are favourable, and due precaution be taken to guard against abrupt vicissitudes. But when, in the progress of the affection, pulmonary inflammation or hemorrhage, terminating in consumption, is menaced, or has actually taken place; confinement to a warm and equable temperature will form one of the most essential points of the treatment:* while, in

* A young lady pale, thin, and delicate, was seized, in winter, with severe Hooping-cough. Signs of debility being observed or apprehended, tonics and ex-

the bronchitis or cerebral affections attended with low fever, the free admission of cool and fresh air will be as distinctly indicated.

Change of Air, respecting which so much has been written and said in the treatment of Hooping-cough, may be prescribed with benefit when the violence of the disease has past; especially if the place of destination for the invalid be judiciously chosen. Purity and dryness of atmosphere are the obvious principles by which the selection should be governed. But it is probable that, under these circumstances, the auspicious result may not be exclusively attributable to aërial influence. The powerful impression, made upon the brain and nervous system by novelty of situation and external objects, should be duly estimated. The effect of moral agents in breaking asunder the links of morbid association is well known. Thus, a sudden impulse of terror or surprize has

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ercise were prescribed. The cough subsequently became most violent and distressing; accompanied by a sense of heat and soreness in the chest, occasional expectoration of blood, and all the symptoms of the febrile state. By the directions of the writer, she was now put upon abstinent diet, leeched, blistered, and constantly confined to a regulated temperature of 64°. Under this system, all the more formidable symptoms slowly but gradually gave way. When spring had sufficiently advanced, the patient was released from confinement; and returned, some weeks afterwards, from an excursion to the south, in perfect health. A case, nearly similar, occurred during the past winter. Here, however, the pulmonary symptoms were less violent; the inflammation clearly confined to the summit of the windpipe; and the head more decidedly affected. Leeches to the throat and occiput, blistering, abstinence, sedatives, and warm air, were employed with more promptly conspicuous benefit, than in the last case: and the Lady is now (February 1829) convalescent.

sometimes arrested suddenly, and even permanently, the paroxysm of chincough in the decline of the disease. From a change of residence in its earlier stages, particularly when the season is unfavourable, and the choice of situation erroneous, acute bronchial or pulmonary inflammation has occasionally resulted with all its dangerous and distressing consequences, in Chincough.†

The Dietetic Restrictions, applicable to Hooping-cough, in its various complications, should be governed by the following principles :—In all cases, the quantity of the alimentary substances allowed, should be so moderate as not to distend the stomach by their bulk ;—the quality such as will not induce fermentation and consequent evolution of gas, or otherwise derange the organ : for by fullness, or derangement of its functions, the bronchial and cerebral affections will be invariably aggravated.—In simple chincough, the food should be light, unstimulating, and gelatinous.—In the severer forms of complication with active bronchial or cerebral inflammation, and especially during the early stage, the most rigorous abstinence should be observed. The strength will be best sustained by plain broths and jellies in the progress of the struggle.—To recruit the forces of the system, when the

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* A little boy, suffering from chincough, of common severity, during winter, was injudiciously removed from a comparatively favourable to a cold and damp situation 10 miles distant. Next day, violent symptoms of pulmonary inflammation came on ; and were only subdued by the most active treatment.

violence of the disease in its simple or complicated forms is past, plain animal food should be selected. It possesses the advantage of combining highly nutritious properties with smallness of volume and inaptitude to ferment. But great caution and forbearance, with respect to food, should be exercised at this period. On recovery from chincough, as from many other diseases, the appetite is commonly voracious: and distressing and even fatal effects have sometimes resulted from its inordinate indulgence.

The Treatment of the Morbid Affections remotely consequent on Chincough requires no diffuse comment. It will obviously be regulated by the peculiar seat and character of the individual symptoms, with little reference to the nature of the original disease. *Tubercular Consumption*, for example, will be best,—although seldom when once developed, successfully,—opposed by residence in a genial and unvarying atmosphere, light tonics, animal diet, and the insertion of a caustic issue in the vicinity of the lungs.* Of *Organic Disease of the Heart*, originating from this as from other causes, the termination must be obviously fatal. But the sufferings of the patient will be signally relieved, and his existence protracted, by repose, confinement to a warm atmosphere, and the administration of Narcotics combined with Digi-

* Dr. Watt has borne the most decided testimony to the beneficial effect of issues in such cases.

talis, Squill, and other Diuretic remedies. The cure of *Chronic Intestinal Inflammation* will be most efficiently attempted by the employment of mild alteratives and aperients, leeches and blistering, occasional immersion in a warm salt bath, and by simple gelatinous diet. And for the removal of *Enlargement or Induration of the Liver, Spleen, or Mesenteric Glands,** mercurial frictions may be prescribed with a prospect of success: especially if the powers of the system be sustained, under the debilitating operation, by a judicious plan of medicinal and dietetic treatment.†

Hooping-cough has never yet been viewed with an eye, or discussed upon principles, sufficiently comprehensive, by a British writer.‡ This consideration

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* The chronic congestions of the Liver, Spleen, and Intestinal Canal, frequently consequent on severe chincough, and the Ascites more rarely observed, probably arise from the obstruction encountered by the inferior vena cava in discharging its contained blood into the pulmonary cavities of the heart. Continued difficulty of respiration has evidently the effect of keeping these cavities in a gorged state. The Mesenteric Enlargement may, in general, be considered as the result of irritation of the mucous intestinal membrane; explicable on the same principle as a swelling of the axillary glands from the irritation of wound or sore in the extremity of the limb. Mesenteric disease, independent on this source, is perhaps not very common.

† Affections of the spine also sometimes succeed protracted chincough. When, therefore, debility of the limbs, or other sign of spinal disease, is observed during its latter stages or after its cessation, the condition of the vertebræ should be closely investigated. Such affection will require the same treatment as when otherwise originating:—irritant embrocations, blistering or cautery; the recumbent posture; tonics, and nutritious diet.

‡ It is curious and interesting to trace the progress of discovery respecting the real nature of Chincough. Previously to 1812, when Dr. Watt's attention was first powerfully excited to it by the illness of his children, nothing but vague and

will form some apology for the great length to which the preceding discussion has been extended. Argument however specious, and illustration however imposing, must yet never be suffered to usurp the place of facts in science; and the reader is earnestly admonished to regard the views and opinions here disclosed, with severest scrutiny; and to adopt them only as they shall answer to the decisive test of utility in practice. The author has, himself, a confidence in their correctness and value, which years of close observation and successful experiment could

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contradictory opinions prevailed upon the subject. And most feelingly did he deplore the absence of all precise information, in the works which he consulted. On dissection of his two children, bronchial inflammation was discovered. Other victims of the disease exhibited a like morbid condition. To Dr. Watt, therefore, belongs the honour of having first shewn the dependance of chincough on bronchial inflammation. In attributing it exclusively to this source, Watt was followed by Marcus, 1816;—Alcock, 1820;—Guersent, 1823;—Pearson, 1824;—Dewes *(Treatise on the Physical and Medical Treatment of Children)* 1825;—and Fourcade-Prunet, 1826. On the other hand, Leroy *(Médecine Maternelle,* 8vo. Paris) 1803;—Boisseau *(Dictionnaire abregé des Sciences Médicales* T. V. and Webster, supported by a fact from Wardrop, *(Morbid Anatomy of the Human Eye)* 1822;—and Bégin 1825,—contend that Chincough is essentially a cerebral affection.—The question, at last, has been decisively settled by Desruelles, in the valuable *Treatise* which has afforded so much assistance and support in the arrangement of this Sketch. Some little merit, may, however, be here claimed by the writer. In a conversation on the subject with the late Dr. Watt, in 1814, he declared an opinion that a partial glimpse only of the truth had then been caught; that on the principle of mere bronchial inflammation, all the phenomena and modes of termination of Chincough could not be satisfactorily explained. He particularly pointed out the frequent occurrence and fatality of affections of the brain in Chincough; and predicted that by a close study of these cerebral complications, the truth would ultimately be discovered. For ten years past, he has been constantly expressing, and acting upon, the conviction that the bronchial inflammation is essentially connected with cerebro-spinal irritation, in Chincough.

alone inspire. Meanwhile, the facts, principally supplied by the evidence of impartial or dissentient writers, are incontrovertible: and many of the inferences drawn from them, repose on the broad and usually solid basis of popular experience. Enough has, at all events, been now said to divest Hooping-cough of the deep mystery and disguise which have hitherto discouraged or repelled the spirit of investigation;—to expose an outline, however faint and imperfect, of its real character;—to direct professional attention upon one of the most distressing and fatal diseases of early age;—and thus to rescue its treatment from the feeble hand of anile ignorance and superstition, and from the more dangerous grasp of blind and reckless empiricism.

The few diseases, capable of being communicated both by *Immediate Contact or Inoculation*, and by *Respiration of an Infected Atmosphere*, next come under examination. These are Chicken-Pox;—Small-Pox;—and, perhaps, the Plague.

Chicken-pox is too well known to require description. It is commonly a mild disease. Under ordinary circumstances, it will require little interference from art. A light and unstimulating plan of diet; confinement to a mild and uniform temperature; and an active purgative twice or thrice administered on the decline of the pustular eruption, will, in general, suffice to avert danger, and remove the consequences of the affection. In some cases, however, it assumes an aggravated character; and is then distinguished

by the popular appellation of *Swine-pox*. The pustules, under these circumstances, have sometimes been so large as to leave upon the skin permanent traces of their existence. Instances of even fatal termination of chicken-pox stand upon record. Susceptible of being communicated by inoculation, and by the atmosphere, it is obviously both a contagious and infectious disease; and hence, like Small-pox, correctly entitled to introduction here. From the circumstance of its exhibiting this contagious character,—and the strong resemblance which the pustule of Chicken-pox in its more aggravated form, assumes to that of Small-pox, serious and perplexing errors have occasionally arisen. The reported failures of vaccination may, perchance, in some instances, be satisfactorily traced to this source.

Of the utter extinction of *Small-Pox* by Vaccination, the most sanguine eulogists of this splendid discovery of Doctor Jenner must, at length, despair. Among the ignorant and prejudiced of the population in many of the larger towns of England, the disease has lately been committing dreadful ravages. To oppose an efficient barrier to its future extension, the powers of legislature are, in this free country, obviously inadequate. The accomplishment of the salutary work must, therefore, be left to the more slow but certain influence of knowledge and education, and of the light emanating from them, on the public mind.—Meanwhile they, who decry vaccination on the score of its occasional inefficacy as an

antidote to the poison of Small-pox, should recollect that, even in the comparatively few and inexplicable cases of failure, Cow-pox never fails to divest the latter of its terrors, and to render it a mild disease. Small-pox itself has, indeed, been known to attack, a second time, the same individual. In one of the fatal instances of the disease, which have fallen under the observation of the writer, this singular fact was clearly established both by the previous appearance of the patient's face, and by the evidence of her family. The brain and spinal marrow were, in all these unfavourable cases, the organs principally affected. Delirium, involuntary twitching of the muscles, a dry brown or black tongue, intolerable fetor of the body and its excretions, terminating in stupor;—and all the phenomena which signalize severe and fatal typhus,—have invariably attested the close analogy which exists between the two diseases. The same principles, slightly modified, will be found applicable to the treatment of both. Of the once fashionable employment of cordials and stimulants in their early stages, all formal reprobation would, it is confidently hoped, be, at this period, superfluous.*

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* Among the best works which the reader can consult on the subject of the Variolous and Vaccine Diseases, are Dr. Adams', *Popular View of Vaccine Inoculation*, 12mo. London, 1807;—Dewar's *Account of an Epidemic Small-pox, which occurred in Cupar, in Fife*, 8vo. Edinburgh, 1817;—Moore's amusing *History and Practice of Vaccination*, 8vo. London, 1817; and Baron's ably-written *Life of Edward Jenner, M. D.* London, 1827.

Whether the *Plague* be really an infectious disease in that sense of the term to which its meaning has been, in this work, restricted; or whether absolute contact be necessary for its propagation, seems yet an undecided question. Fortunately for this country, her physicians now possess few opportunities of determining by observation or experiment, the precise mode whereby it is communicated. The evidence of the medical officers of the British and French armies, during their memorable conflict on the shores of Egypt, rather favours an opinion that the disease is communicated, principally if not exclusively, by immediate contact. The question, however, lies yet involved in great obscurity. That a specific poison, capable of propagating the disease, is generated in the buboes of individuals suffering from Plague, the fatal result of inoculation of the human body with their contained fluid has been adduced as conclusive testimony. But from a solitary fact like this, no perfectly decisive inference can be drawn. A person, inoculating himself from the body of another infected with Plague, would obviously be exposed to the influence of the disease in its more ordinary mode of atmospheric or of personal communication.*

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* Several years ago, a French physician fell a victim to the experiment of *inoculating himself* with the pus taken from the bubo of a Plague-patient. For the reasons stated, however, this test is not conclusive. In the *Lancet*, vol. II. p. 44, there are some facts taken from a German Journal; which, if accurately stated, evidently shew that the disease is communicable by inoculation. For information respecting Plague, see Larrey's *Mémoires*, before quoted:—Desgennettes' *Histoire*

Upon the important question whether Plague and Yellow-fever, Typhus and other congeneric diseases, ordinarily reputed as infectious, are really susceptible of communication from one individual to another, much diversity of opinion has long existed in the medical world. The partizans of the opposite theories have ranged themselves under the two distinct sects of Contagionists and Non-Contagionists. The controversy has been maintained with great spirit, obstinacy, and talent. Each party confidently arrogates to itself the victory. It is, however, the opinion of sober and unprejudiced inquirers that the truth, in this as in many other controverted questions, lies between the two opposite extremes. Plague, and Typhus, and other fevers of analogous character, do not, and obviously cannot, in every instance, arise from intercourse with an infected person. They, in fact, originate spontaneously whenever and wherever the various conditions necessary for their development, are congregated in sufficient power; and, thus developed, become, under certain circumstances, susceptible of communication from one individual to another. At first local, they afterwards assume an infectious character.* This truth, so obvious,—so consonant with

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Médicale de l'Armée d'Orient, 8vo. Paris, 1802; and two highly interesting Papers by Dr. Calvert; and Mr. Webb, *Medico-Chirurgical Transactions*, Vol. VI.; and *Medical Transactions*, Vol. VI.

* This is well illustrated by the fact detailed in the note, p. 156, of the present work; and by others which are subsequently stated. The origin of the "Cambridge Fever" is, with great probability, attributed by Dr. Haviland to the condi-

reason and experience,—as to excite surprize that it has never yet been generally appreciated and received, at once reconciles all the discordant opinions of the disputants, and affords an easy solution of the difficulties and contradictions with which the subject has been embarrassed. If this view of the question be correct, as doubtless it is, the Non-Contagionists must evidently retreat from the ground which they have taken up. Their position is no longer tenable. The unsoundness of their creed can only be surpassed by the dangers of its tendency. And England might have cause to rue the day when her present immunity from the pest of less fortunate regions should be sacrificed to the theories of speculative men: and her Legislature, by abrogation of the Quarantine Laws, incur the risk of reproducing those scenes of national misery and desolation, from the retrospect of which, at the distance of nearly two centuries, the least sensitive mind must recoil with horror.

The *Effluvia* which arise from *Animal Substances in a state of Decomposition after Death*, and their penetrating and offensive odour, are familiar to all. But it is not as generally known that, from exposure to their influence, under circumstances of the body favourable to the exertion of such influence, a most terrible fever may be engendered in the human sub-

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tion of the "drains and ditches," which had been much neglected, while the population had greatly increased. *Medical Transactions*, Vol. V. p. 398.

ject.* This fever will assume the character of severe typhus; and, once established, become capable of communicating to others a similar disease, by infecting the atmosphere around the sick person. It is indeed not uncommon to hear that individuals have been seized with fever shortly after attendance on the funeral of a deceased friend or relative:† and, a few weeks only have elapsed since several persons in one family, suffered severely from typhus; the origin of which was clearly traced to the putrid emanations of a dead body. Of this, during a warm

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* Specious arguments have, of late, been adduced to prove the "Innocuous Nature of putrid Animal Exhalations." See *Lancet*, Vol. II. p. 629. Nothing, however, can be more certain than that, in certain conditions of the system, predisposing it to their influence, they operate with fearful energy. In the summer of 1815, a tanner's servant was stricken, while working upon a heap of putrid cow-hides, with intense head-ach. Vomiting of black bile, violent fever, low delirium, jaundice, petechiæ, discharge of blood from the bowels, hickup, and subsultus, followed. The apparently desperate struggle terminated favourably under active treatment. A few days subsequently, a son of this man sustained an attack of Typhus, complicated with jaundice and petechiæ. The symptoms, however, were comparatively mild: and the young man soon recovered.

† A middle-aged tradesman, in 1816, complained of having been very unpleasantly affected by the offensive effluvia of a corpse, which he had accompanied to the grave. After the lapse of a few days, during which he had "never been able for a moment, to get rid of the smell," low fever, attended, from the commencement, with hickup and extraordinary depression of the mental and physical powers, was developed. The conflict was severe and doubtful; but the patient recovered. His wife and maid-servant exhibited, afterwards, all the symptoms of genuine, yet comparatively mild, Typhus. It is a remarkable fact, that, although during the twenty years of the writer's practice at Tamworth, insulated cases of severe Typhus have repeatedly occurred in the place, the disease has never extended so as to assume the character of an Epidemic. Yet Typhus, during that period, has spread great devastation among many of the surrounding towns and villages. At this moment, the typhoid infection, which, for more than twelve months, has been depopulating Fazeley,—distant only one mile to the south,—is not utterly extinct.

and close season, the interment had, from some absurd and well-nigh fatal prejudice, been too long delayed. Inferences, deeply involving the public welfare, may be deduced from these facts :—the dead should, at all times, and, especially during the summer-season, be committed to the earth as soon as possible after the extinction of life. And whenever insuperable obstacles exist to oppose this salutary practice, the disinfecting process lately described and recommended by Mr. Labarraque, in his valuable Treatise,* should be sedulously adopted. For the conviction of those whose hopes and fears may be excited by the marvellous stories of resuscitation after days of apparent death, it may be well to observe that the traces of commencing putrefaction will at once suffice to dispel every lingering doubt or illusion on this subject. After all that has been written respecting it,† decomposition constitutes, perhaps, the only infallible sign of actual extinction of the vital principle.

If such be the operation of the effluvia from animal bodies in a few hours from the commencement of the process of decomposition, what must be the

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* *De l'Emploi du Chlorure de Chaux et de Sodium.* 8vo. Paris, 1825.—See also Mr. Alcock's excellent *Translation* of the work; and Mr. Scott's *Disinfecting Properties of Labarraqués Preparations of Chlorine.* 8vo. London, 1828.

† A very curious Paper, by Dr. Romero, entitled, "Signum Mortis pathognomonicum in homine repentinâ morte extincto," may be found in *Medical Transactions*, Vol. V. The "infallibility" of the test, there proposed, may be very fairly questioned.

condition of the atmosphere in those situations, as the Dissecting-room and the Slaughter-house, where anatomical subjects and the offal of slaughtered animals, are frequently left to exhale their putrid effluvia for weeks? The fact is that, before the present improvements in the structure and ventilation of dissecting-rooms were adopted, many young students in medicine, too ardent in the prosecution of anatomical science, or too delicate to resist the influence of this source of infection, annually fell victims to it, in the British Schools.—An affecting instance of this self-devotion was exhibited, in a friend of the writer, more than twenty years ago.—A brief outline of the history of his case will not be uninteresting.* In external character and morbid appearance after death, it con-

* A healthy student, aged twenty, while intently occupied, with the writer, in the dissection of a very putrid body, was dreadfully affected by the effluvia arising from it. Head-ach, despondency, frequent ejection of the contents of the stomach, loss of appetite, and a peculiar paleness of the countenance, were the symptoms first experienced or observed.—He complained that the "horrible stench" constantly pursued him; that every thing which he ate and drank, was "poisoned" with it. His friend anxiously, but in vain, entreated him to abandon the noxious occupation. Yet his ardour was such that he would not quit the dissecting-room, until he was attacked with fainting; and, in this state, carried to his lodgings. Fever, accompanied by head-ach, excessive mental irritation, intolerance of light, and morbid sensibility of hearing, was, from this moment, declared; and, after a short conflict, terminated by delirium and fatal stupor. On dissection, the arachnoid membrane of the brain exhibited every where a pearly aspect. The pia mater was inflamed; the vessels on the surface, and in the interior, of the brain loaded with blood; the choroid plexus excessively vascular and turgid; and the lateral ventricles filled with serum. All the other organs were sound. If, among the readers of this narrative, there be any one who, in the winter of 1806—7, was a diligent member of the School of St. Bartholomew's, in London, he will at once recognise the subject, and attest the fidelity, of the sketch: and acknowledge the justice of this feeble tribute to the memory of JOSEPH KETT.

spicuously demonstrates the close resemblance which exists between the fever engendered by inhalation of putrid animal effluvia, and typhus; if not their perfect identity.

An example may also be appropriately adduced, where the origin of Typhus was very clearly traced to the exhalations of a heap of the putrefying refuse of a Slaughter-house. The nuisance had been accumulating, unobserved by those who subsequently suffered from it, during some weeks of an unusually rainy but warm summer.*—Whenever the circumstances attending the development of infectious fever are, therefore, such as to indicate the operation of a local cause, no effort should be left unemployed to discover the source, and accomplish its removal.

An equally important inference may be drawn from a retrospect of all these facts:—neither *Dissecting-room, Burial-ground,* nor *Stagnant Waters, wherein Ani-*

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* In August 1817, a fever, possessing all the characters of Typhus, broke out in a school at a populous town in Leicesterhire. No instance of infectious fever had, for some months previously, occurred in that neighbourhood.—Seventeen of the inmates of the establishment were affected so simultaneously, or in such rapid succession, as to leave no doubt of the origin of the disease from the operation of some local cause. Impressed with this opinion, the medical attendants were indefatigable in their efforts to detect the source of the infection: and it was, at length, found that a heap of putrid offal, the refuse of a neighbouring slaughter-house, had long been accumulating beneath the boundary-wall of the school-grounds.—The stench, which it emitted, was intolerable: and the wind, for some weeks, had generally blown from such a quarter as to waft the noxious emanations directly across the spot where the Ladies were accustomed to take exercise. None, except those who were so exposed, suffered *originally* from the infection. The source of mischief was immediately removed: and the fever became extinct without spreading beyond the detached building in which it had originated.

mal Substances are constantly undergoing the process of putrefaction, should be allowed to exist in the centre of a large and populous town, whenever their removal is practicable; and the proposed transfer of the *Slaughter-Houses* from the heart of London to the suburbs, in imitation of the celebrated Abattoirs of Paris, will, if carried into execution, not more effectually promote the cleanliness and comfort, than enhance the salubrity, of this vast Metropolis.

The *Mineral Substances,* which exert a baneful or deleterious operation upon the human system in a *State of Vapour*, are principally Arsenic, Quiksilver, and Lead.

When long or largely inspired, the *Fumes of Arsenious Acid* induce dryness and inflammation of the mouth and throat, sneezing, difficult respiration, cough; anxiety; vomiting; giddiness, pains of the head and limbs, and tremors. In fatal cases, death is commonly determined by pulmonary consumption.

Persons employed in the art of gilding, in the silvering of mirrors, and in the construction of barometers, are principally exposed to the noxious influence of *Mercurial Vapours.* The symptoms which they exhibit, do not materially differ from those induced by the excessive introduction of Mercury into the system by the more ordinary routes. These are giddiness, tremor and paralysis of the limbs, impaired state of memory and intellect, salivation, ulceration of the mouth, difficulty of breathing, expectoration of blood, emaciation, apoplexy, and death.

The noxious consequences resulting from exposure to the *Effluvia of Lead*, are most commonly exhibited by plumbers, painters, and others employed in diverse operations on this metal. The principal symtoms, induced by it, are intestinal constipation with violent spasmodic pain, familiarly designated the "Painters' Colic;" impairment of the nervous energy, and general or partial palsy.

From a review of these facts, it may be inferred that Arsenic, applied to the body in an aëriform state, exercises its deleterious operation principally, or exclusively, on the lungs: and Mercury and Lead, upon the nervous system and intestinal canal. It is probable that, in the two latter instances, the brain and spinal marrow receive the first impression of the noxious effluvia; and that, through them, the bowels consecutively suffer. This reasoning is peculiarly applicable to cases of disease induced by the emanations of Lead; where diminution of energy and paralysis constitute the more prominent phenomena. A French writer* asserts that, in the intestinal affections resulting from absorption of lead, the muscular coat of the bowels, with its nervous system, is exclusively implicated. His arguments in support of this opinion are forcible, if not conclusive. For it requires little reflection to comprehend that if, by the direct operation of the aërial poison upon the brain and its

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* Mérat. *Traité de la Colique Métallique.* Paris, 1812.

consecutive influence on the nerves distributed to the muscular coat of the intestines, the energies of the latter are materially impaired, the bowel will necessarily become insensible to the impression of ordinary stimulants, and fall into a state of torpidity and irregular contraction. Hence, the obstinate intestinal constipation which forms the invariable and perilous attendant of Painters' Colic.

Of the *Morbid Appearances* discovered after death by inhalation of Arsenical and Mercurial Vapours, medical literature presents no record. Contraction of the large intestine is the only deviation from the natural state which has been observed on the dissection of persons destroyed by exposure to the effluvia of Lead. The spinal marrow does not appear to have been examined in these cases.*

Prevention of the baneful consequences suffered by workmen from the inhalation of these various metals in a state of vapour, can be only accomplished by judicious and effective ventilation of the rooms through the atmosphere of which they are dispersed. A reduction of the hours of labour, and occupation of the intervals in active exercise would probably diminish the number of victims to the influence of these subtle agents and mitigate the severity of the diseases resulting from them.

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* For farther information respecting Metallic Vapours, the reader is referred to the various works on Toxicology and Medical Jurisprudence, before enumerated; particularly to the *Traité*, and *Leçons*, of Orfila; and the *Elements of Medical Jurisprudence*, by Beck.

The *Treatment* of these diseases must obviously be governed by a consideration of the peculiar nature of the aërial poison inhaled, and by the character and intensity of the symptoms. On general principles, it will suffice to state that the pulmonary affection excited by respiration of Arsenical Vapours, will, if it have not attained an incurable stage, yield to the influence of pure air and a milk diet; and that the effects resulting from the operation of Mercury in an in an aëriform state, will be most effectually combatted by the internal employment of Sulphur, the Alkalis, Opium, Cinchona,—and nutritious diet.

Antiphlogistic Remedies are generally unavailing in the treatment of Colic induced by exposure to the Effluvia of Lead.* Opium is the agent principally to be relied on. It should be administered every second or third hour. Evidence highly favourable to its employment, in such cases, has been given by the Spanish physicians.† The work of Dr. Pemberton‡ con-

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* A young man was dreadfully ill from colic, consequent on an almost incessant exposure to the influence of saturnine emanations. Purgatives, injections, and all the usual remedies had been actively employed in vain; when the writer was consulted. The situation of the patient was discouraging,—almost desperate. A few ounces of blood taken from the arm, three drachms of Spirit of Turpentine were immediately administered, and repeated at short intervals. By this remedy the bowels were soon freely emptied: and the young man rapidly recovered.

† See Orfila's *Traité*, Vol. I; and Luzuriaga's *Dissertacion medica sobre el Colico de Madrid; inserta en las Memorias de la Real Academia Medica*, &c. Madrid, 1796.

‡ *Practical Treatise on various Diseases of the Abdominal Viscera*, 8vo. London, 1806.

tains also some valuable observations on this subject; and especially on the treatment of paralysis determined by the operation of Lead in an aërial form.

CHAPTER VIII.

OF CUTANEOUS IRRITANTS AND POISONS,—CONSIDERED AS THE EXCITING CAUSES OF DISEASE.

THE Agents which excite constitutional irritation and derangement, by application to the surface of the body, independently on mere mechanical or chemical injury, admit of distinction into the Natural and Morbid Poisons. The designation, *Contagious*, may, with evident propriety, be applied,—and should be exclusively restricted,—to them. The natural poisons belong to the animal, or vegetable, or mineral kingdom. The morbid are furnished by animal bodies alone.

There exists a marked diversity in the circumstances necessary to ensure the operation of Cutaneous Poisons upon the system. With some, simple contact is sufficient. Others only exhibit their influence when the skin has been punctured or abraded. An equal difference may be observed in the characters of the morbid state resulting from them. In the majority of diseases propagated by contagion, the derangement does not constitute a specific affection; and is insusceptible of communication from the individual suffering. In others, the disease is specific and communicable. The vegetable and mineral poisons oper-

ate by simple contact: the animal, with few exceptions, require inoculation for the development of their peculiar influence. The natural poisons excite an incommunicable:—from the morbid, results a contagious disease, of specific character.

Of the *Natural Poisons*, belonging to the *Animal Kingdom*, the irritating principle of the *Cantharis* or Blistering-fly, when applied to the surface of the body;—and the venomous fluid instilled into a wound from the tooth of the common Viper, and from the stings of some of the Hymenopterous Insects, as the Bee, Wasp, and Hornet,—constitute the most familiar examples in this country.

The application of blisters is sometimes, exclusively of the distressing affection of bladder induced by absorption of their active ingredient, productive of fever and great constitutional disturbance. In some particular conditions of the system, it will be followed by a cutaneous eruption which is usually but erroneously regarded as Erysipelas, and attended by signs of severe general derangement. Under still more unfavourable circumstances, Malignant Boil or Carbuncle has apparently been excited by the irritation of a blister. Several formidable and some even fatal cases, illustrating both these descriptions of accident, have fallen under the notice, or come within the knowledge, of the writer. The cutaneous affection, or *Eczema*, will require such local and general remedies as are best calculated to sooth irritation, and support the

strength of the system.* The treatment of the Carbuncle is the same as that which the disease arising under ordinary circumstances, will demand.

The topical and internal employment of Ammonia is the best remedy for the poison of the *Viper*.† Against the pain and inflammation resulting from the *Sting of Insects*, a lotion of diluted laudanum or vinegar, or a sedative poultice, constitutes the most effectual application. In some instances, the symptoms consequent on this trivial injury, are exceedingly severe. Examples of its fatal termination have been occasionally recorded.‡

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* See Bateman's *Synopsis*, p. 255. In the year 1822, an elderly Lady, suffering from obstinate congestion of the brain, had, after the repeated employment of blood-letting and purgatives, a blister applied to the back of the neck. The discharge was subsequently kept up by dressing with Savin Ointment. After the lapse of a few days, symptoms of violent illness suddenly came on. Nausea, shivering, depression, restlessness, thirst, hot skin, a loaded tongue, and feeble and rapid pulse, were principally complained of or observed. There had been no deviation from the regulated plan of diet: and the cause of the mischief appeared inexplicable, until the writer thought of examining the neck. The whole blistered surface was in a highly-inflamed condition, and surrounded on the margin, by vesicles of Eczema. The eruption progressively extended to the occiput and shoulders; and, afterwards travelling down the back, terminated only at the heels. The whole process occupied nearly ten days; and was attended with frequent faintness and other signs of great debility. Hot fomentations and poultices constantly afforded relief: and aperients, sedatives, ammonia, and nutritious diet, soon repaired the constitutional mischief resulting from the local irritation.

† See "A very extraordinary Instance of Recovery from the Bite of a Viper," *Lancet*, Vol. XII. p. 732. In this interesting case, ammonia was both internally and externally employed. An excellent representation of the *Coluber berus*, and of the curious apparatus with which its mouth is furnished, for the secretion and transmittal of the venom, may be seen in Plate XX. of the accurate *Engravings* to Orfila's *Leçons*.

‡ A previously healthy man is reported, in the journals, to have died, last summer, in Scotland, from the consequences of a sting inflicted by a wasp, upon his

Among the few articles supplied by the *Vegetable Kingdom,* which act powerfully on the system through the medium of the skin, the *Hydro-cyanic Acid,* and the *Leaves and Extract* of *Belladonna,* are especially entitled to enumeration. They operate with destructive energy, when long or largely applied. That violent intestinal stimulant, the *Oil of the Croton Tiglium,* will act briskly on the bowels, even when rubbed in upon the surface: and may thus, sometimes, supply a valuable auxiliary where, from the loss of power of deglutition, obstinate sickness, or other cause, the ordinary route for the introduction of purgative remedies is interrupted. Many vegetable productions induce severe cutaneous irritation without otherwise deranging the system: as the Leaves of the *Common Nettle,* the juice of the *Sea-Squill;* the seeds of *Mustard;** and the down which invests the pod of *Cowhage,* or *Dolichos pruriens.*

Quicksilver and *Lead* are the *Mineral Substances* which exercise a general or specific influence upon the system, in *Cutaneous Application.* The phenomena

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cheek. Beck, in alluding to such cases, recommends "emollient anodyne applications to the injured part," after extraction of the sting; and the internal exhibition of ammonia. *Elements* before cited, p. 579.

* Hence flagellation with nettles has been employed, as a cutaneous irritant upon paralytic limbs. And powdered mustard-seed is frequently directed, in the form of bath or poultice to stimulate the extremities. If the mustard-cataplasm be suffered to remain too long on a part, it will excite painful inflammation and ulceration, or even sloughing, of the integuments.—The use of *boiling* vinegar or water in its preparation will dissipate the volatile principle of the seed; and greatly impair, or altogether destroy its activity.

of salivation, induced by mercurial inunction, are unfortunately too well-known in this country. And, from the extensive use of Lead in the shape of lotion, all the symptoms characteristic of its peculiar operation on the animal economy in the more ordinary mode of introduction, have repeatedly been experienced. Even *Antimony* itself, which, in the form of Ointment or Embrocation, constitutes an admirable external irritant in many varieties of disease, cannot always be applied without inducing nausea, depression, and great constitutional derangement;—and sometimes a general cutaneous eruption resembling Nettle-rash.

In the *Treatment* of the Vegetable and Mineral Cutaneous Poisons, the first and most obvious principle is the prompt removal of the irritating or deleterious substance from the surfaces upon which it has operated. The subsequent remedies will be nearly or precisely such as would be required to counteract the effects resulting from the internal administration of the identical agents.

Several Mineral Substances, when applied to the skin, irritate or destroy its texture without producing any disorder except that which results from the local injury,—any specific operation,—upon the general system. Of this kind, are certain preparations of *Arsenic*, *Silver*, and *Copper*; the *pure Alkalis*, hence denominated caustic; and the *Mineral Acids*. Consequently, if any distinct examination of them were required, it would be more correctly introduced into that portion of the volume where the chemical operation of External Agents will be considered.

Under the division of *Morbid Poisons* which operate upon the human system exclusively by *Contact* or *Inoculation*, may by comprehended, the Essence of some of the numerous tribe of Cutaneous Diseases; the Poison of Cow-pox, and Syphilis; and the Saliva of certain Animals in a rabid state.

On the subject of *Cutaneous Diseases*, a popular prejudice has long prevailed; which as frequently leading to erroneous measures in their treatment, and sometimes influencing the opinions and conduct of professional men, it is important to expose and rectify. Not only by ordinary observers, but even by those in whom such negligence admits of no apology, all cutaneous eruptions, however dissimilar in origin and character, are usually classed under the vague and sweeping designation of *Scorbutic;* and, from their supposed identity or connection with Scurvy, combatted indiscriminately by vegetable diet and a regular course of purgative salts. Unfortunately for the correctness of such views, genuine Scorbutic Diseases are rarely seen in the interior of this island: and the majority of chronic eruptions neither exhibit the slightest affinity to Scurvy, nor yield to the remedies which are employed with success in that affection.—In illustration of these truths, *common Leprosy*, and some of the more prevalent varieties of *Psoriasis*, or *Scaly Tetter*, may be selected. They principally attack persons of delicate or scrofulous habit, or such as have suffered from the depressing influence of sorrow, poverty, defective aliment, or excessive labour,

from exposure to inclemencies of weather, or the ravages of previous disease. They are signally aggravated by the large or exclusive dietetic employment of vegetable substances, and by the operation of neutral salts and all debilitating remedies. Solid and nutritious food, and the vegetable and mineral alteratives and tonics, with moderate exercise, will, on the contrary, mitigate or remove them. The salutary effects of these invigorating agents will be greatly promoted by occasional immersion in saline or sulphuretted waters; or by frequent sponging of the body with them.

The *Scalled Head*, a species of *Porrigo*, is one of the most obstinate complaints which can attack childhood. It is highly contagious: and once introduced into a nursery or school, generally extends to most of the inmates. Great diversity of opinion exists respecting its treatment: and although nature has been ransacked to supply remedies,—and every village-matron boasts the possession of a specific,—for its cure, years frequently elapse before the removal is accomplished. The disease, in fact, is subject to occasional variations which require a corresponding change of treatment: and thus remedies which, at one period, operate beneficially, may prove, at another, inert or mischievous. Nor does this constitute the only source of failure. Scalled Head has commonly been considered a purely local affection. Yet signs of constitutional derangement may be clearly discerned in protracted cases. Whether such derangement result from the

local irritation; or form a pre-existing condition without which the impression of the disease cannot be received,—is perhaps doubtful. At all events, recovery will be greatly accelerated by a judicious combination of constitutional with local treatment.

Experience of their inutility has led some intelligent physicians of the present day to reject all unctuous applications from the treatment of Scalled head. Re-iterated employment of leeches on the shaven scalp, frequent ablution with tepid water followed by the use of a solution of sulphuret of potash, nutritious diet of solid animal food and milk, an occasional purgative of Calomel and Scammony with a continued exhibition of the Tincture of Muriate,—or other preparation,—of Iron, will constitute a plan of treatment, as ultimately efficacious as easy of adoption; and hence valuable to those, whose situation or resources preclude the advantage of regular professional attendance. Shaving of the head and the application of an essential oil dissolved in spirit of wine, will usually suffice to cure that variety of Porrigo which exhibits circular patches of baldness from falling of the hair.*

Against all the varieties of *Scabies* or *Itch*, Sulphur operates as a specific. When externally applied in the mode and quantity recommended by Mr. Aber-

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* See *A Practical Treatise on Porrigo or Scald-Head, and on Impetigo,* with plates. By Dr. Willan. Edited by Mr. Ashby Smith, 4to.

nethy,* it will rarely fail to accomplish a perfect cure. A similar property has been commonly ascribed to Mercury. This is a dangerous error. Some years ago, two persons were nearly destroyed by the operation of a Quicksilver-girdle which their surgeon had prescribed as a remedy for Scabies. It induced the most painful and exhausting salivation; without making the slightest impression on the cutaneous disease; which was subsequently cured by the Sulphur-Ointment. To the existence of a minute insect, the origin and propagation of this squalid affection has been by some observers, confidently attributed. But far from being an invariable attendant, the *Acarus Scabiei* appears to constitute only a rare and adventitious complication, of the disease.†

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* The plan indicated by Mr. Abernethy, in his *Lectures*, consists in directing the patient to smear his body with common Sulphur-Ointment at night;—clothe himself in a complete under-dress; and lie in bed till the evening of the next day. He is then, on getting up, to employ a warm bath, and, by the aid of brush and soap, clear his skin from the "coat of grease" and other impurities; and reject all articles of dress which he has previously worn, until they have been submitted to a thorough disinfecting process. This treatment rigidly adopted, the writer has never yet known to fail. Eight ounces of the Ointment will suffice for the dressing of a common-sized adult person.

† See Bateman's *Synopsis*, p. 201.—In addition to the works, enumerated at p. 169, Mr. Plumbe's *Practical Treatise on Diseases of the Skin*, 8vo. London, 1824, may be read with advantage. Dr. Bateman's beautiful *Delineations of Cutaneous Diseases*, 4to. London, 1817, are too well known to require eulogy or comment. They to whom the stores of foreign medical literature are accessible, may consult, on these subjects, Alibert, *Description des Maladies de la Peau*, Fig. color. Folio, Paris, 1807—1826,—and *Précis Théorique et Pratique*, 2 Vols. 8vo. Paris, 1822.—far more splendid, costly, and minute, but less luminous and practically valuable, than the productions of Willan, Bateman, and Rayer;—Frank, *Praxeos medicæ universæ Præcepta. De Morbis Cutis*, 8vo. Taurini, 1821;—

Neglect of cleanliness is a fertile source of cutaneous affections among the poor. In their prevention or treatment, the occasional use of simple and medicated baths will exert a most powerful influence. Hence nothing would more effectually promote the public health and comfort than institutions of this nature gratuitously accessible to the lower orders of the people. No populous town should be without them. Amidst all the architectural decorations of ancient Rome, there were none which more strikingly attested the paternal spirit and munificence of her Emperors, than the Public Baths.* With the sums recklessly expended upon the structure or untimely demolition,—in the extravagant alterations and disfigurement,—of the palaces of the British Monarch, an edifice, destined to these benignant purposes, might have been raised; which would have conferred incalculable benefits on his Metropolis, and invested with a signal grace the recollection of his splendid and patriotic reign.

The constitutional derangement produced by introduction of the *Vaccine Virus* into the human system, is usually mild and unattended with suffering or danger. In some cases, of very rare occurrence however,

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Chiarugi, *Delle Malattie Cutanee Sordide*, &c. Firenze, 1807;—and Gomez, *Ensaio dermosographico, o succincta e systematica descripçao das doenças cutaneas.* 4to. Lisboa, 1820.

* Otto, in his entertaining *Reise durch die Schweiz, Italien, Frankreich*, &c. 8vo. Hamburgh, 1825,—asserts that forty thousand Christians were employed, for seven years, on the Baths of Diocletian.

it has been followed by violent and even fatal consequences. The untoward result was probably determined in these instances by a previously morbid condition of the body. The cutaneous eruptions and glandular swellings, which sometimes succeed Vaccination, are generally but erroneously attributed by the parent or the nurse, to some obnoxious peculiarity in the nature of the disease itself, or in the system of the individual from whom it has been derived. For common observation will suffice to prove that where a latent disposition to cutaneous or glandular affections has pre-existed, such germ of disease will be excited into action as rapidly and effectually by Scarlet-fever, Measles, or Small-pox, as by Vaccination itself.

During the last twenty years, the contagion of *Syphilis* has obviously been less common, and exhibited a character less virulent than before, in this country. Whether its comparative mildness and infrequency be attributable to the process of spontaneous decline, which has been so conspicuously exhibited by some of the diseases, as by all the most celebrated institutions, of Man; or to the more successful treatment of this once terrible and extensive contagion, it is difficult to determine. That the fact may be explained by a corresponding improvement in the morals of the age, no cautious observer will admit. The method of cure of Syphilis, introduced into this island by the military surgeons, does not, at present, seem to have acquired many proselytes among the resident

practitioners.* And, from the united testimony of several foreign writers, it may be inferred that the new doctrine has not been more zealously espoused upon the continent than in England.† Experience alone can ultimately decide upon its merits. Yet so invariably successful, under ordinary circumstances, is the mercurial treatment, that few will be allured, except by the love of novelty or experiment, to the proposed deviation. Instances of its failure would probably be still more rare, if, during the mercurial process, the powers of the system were supported, especially in subjects of delicate constitution or the scrofulous diathesis, by generous diet, Opium, and Cinchona. From inattention to this point, perchance, have resulted some of those anomalous and intractable diseases,—horrible compounds of Syphilis and Scrofula,—to which Mr. Abernethy has applied, with his wonted contempt of philosophical accuracy, the name of Pseudo-Syphilis.

Hydrophobia is the term which, with equal incorrectness,‡ has been employed to designate the peculiar

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* Two important papers on the "Treatment of Syphilis without Mercury," are given by Mr. Rose and Mr. Guthrie: *Medico-Chirurgical Transactions*, Vol. VIII; and Desruelles, author of the *Treatise* on Chincough, has published a volume on the same subject, entitled: *Mémoire sur le Traitement sans Mercure*, &c. 8vo. Paris, 1827.—See also Carmichael's valuable *Essay on the Venereal Diseases confounded with Syphilis*, 4to. Dublin, 1814.

† The venerable Hufeland, in his well-known *Journal*, January, 1819, declaims against the "new English method" of treating Syphilis without Mercury; and predicts its ultimate failure: and Otto in the *Reise*, just cited, repeatedly declares that the best continental physicians do not adopt it.

‡ "*Dread of water*," expressed by the two Greek substantives of which the

and formidable train of symptoms induced by the bite of the dog, and other nearly-allied animals, in a rabid state. It constitutes one of the most terrible diseases to which man is subject. The obscurity in which the proximate cause of this affection lies involved; the great uncertainty which exists respecting the period of its development; and the futility of every attempt, hitherto made, to ascertain the precise seat, arrest the progress, or avert the fatal issue of the disease,—all conspire to invest it with a fearful and peculiar interest. That it bears a striking affinity to Tetanus, a review of the external phenomena which it presents, is surely calculated to convey the impression. And, if, in all cases of death consequent on Hydrophobia, the contents of the vertebral canal were minutely examined by men expert in the investigation of morbid structure, the spinal marrow would, doubtless, be found to exhibit, as it invariably does in Tetanus, the unequivocal traces of inflammation or its consequences: and hypothesis thus yield to another most important fact in pathological anatomy.*

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term, *Hydrophobia*, is compounded, does not invariably exist as a symptom of the disease induced by the bite of a rabid animal. It is, moreover, observed in other morbid affections. *Rabies canina*, sometimes employed, is a scarcely less objectionable designation.

* On dissection of a Case of Hydrophobia by Dr. Marcet, *Medico-Chirurgical Transactions*, Vol. I, were found turgidity of the vessels of the brain and slight effusion between the pia mater and arachnoid coat.—In another by Horn, *Journal der Practischen Heilkunde*. Band I, 1815.—See *Medico-Chirurgical Journal*, Vol. I. p. 531,—the vessels of the dura mater were distended; and those of the brain everywhere filled with fluid blood.—A Third, by Mr. Jenkins, *Lancet*, Vol. II, p.

Yet whether the disease be really induced by inoculation with, and subsequent absorption of, a specific poison, or be the result of mere mechanical injury modified by the peculiar nature of the wound and the operation of moral causes,* would, even then, remain a mystery. If, as some enlightened men assert, Hydrophobia may really be induced by the bite of an animal suffering from a transient paroxysm of irritation or slight disease, the latter opinion must obviously prevail to an exclusion of the doctrine of specific poison. On the other hand, the long interval of time which frequently elapses between the infliction of the wound and the development of the symptoms resulting from it, strongly

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461, shews adhesion of the dura mater; distension of the superficial vessels of the brain; congestion of the medullary substance; and slight serous effusion at the basis:—and a Fourth, *same Work* and page, a more than usually florid state of the pia mater of the cranium and spinal canal. In the three first cases, the spinal chord was not examined. The hydrophobic symptoms, in the last, had been partially subdued by copious and repeated blood-letting. A case by Mr. Webster, of which Dr. James Johnson has minutely and luminously described the morbid appearances, *Medico-Chirurgical Journal*, Vol. IV;—a Second, with an Engraving, by Professor Thompson, *Medico-Chirurgical Transactions*, Vol. XIII; a Third, most interesting, by Mr. Godrich, *Medical Gazette*, December 1828; and a Fourth, by Mr. Pout, *Lancet*, Vol. II. p. 328,—all conspicuously exhibit marks of spinal inflammation and its consequences, in death from Hydrophobia. The greater portion of these facts has been accumulated long since the opinions of the writer, which they so strikingly illustrate, were committed to paper. The evidence which they afford, of the close affinity existing between Hydrophobia and Tetanus, will hereafter be fully discussed.

* Much stress has, by some writers, been laid on the influence of the mind in the production of Hydrophobia. This hypothesis, however, must at once be rejected: for it is obviously inapplicable to an explanation of the occurrence of the disease in children and the lower animals. Mr. Godrich, in the valuable communication just cited, expressly states that the patient "died in total ignorance of the cause of his malady."

militates against the admission of their origin simply from mechanical violence. Difficulties, at present insuperable, surround the question on every side. Immediate and unsparing excision of the wounded parts, it is more important to observe, forms the only preventive remedy upon which reliance can be placed. This is a truth which cannot be too often or too loudly rung in the public ear. To a confidence in any other treatment, local or general, the deluded patient will, in many instances, fall a miserable sacrifice.

Re-iterated experiment has most unequivocally proved the inefficacy of general Blood-letting, Mercury, Opium, and all the other most powerful medicinal agents, in subduing the symptoms of Hydrophobia, when once they have been developed. In some cases, of recent occurrence, where active or deleterious mineral substances have been employed, the patient appears to have died rather from the treatment than from the disease. Such a termination, horrible beyond expression where the faintest glimmering of hope yet lingers, is, perhaps, little to be deplored in this most distressing and hitherto invariably fatal affection. Instead of exhausting the powers of the agitated system by profuse general blood-letting, might not sanguineous depletion from the whole track of the spinal marrow, by cupping or application of some dozens of leeches, followed by blistering to the same extent, constitute a fair, as it is yet an untried effort to rescue the subject of Hydrophobia from destruction? During the operation of this

treatment, the perturbation of the system might be tranquillized by the employment of Opium, Belladonna, or the Hydro-cyanic acid; its energies be sustained by large and frequently repeated doses of ammonia; and an attempt made to excite a new action in the system by prompt introduction of mercury from the surface. Such a plan, unsanctioned by experiment, and founded upon hypothetical views of the seat and nature of Hydrophobia, is obviously entitled to little confidence. Yet it possesses the merit of partial novelty; and is, perchance, as consistent with sound principles of pathological science, as some methods which have been lately recommended with louder pretensions, in the treatment of this most fearful of human diseases.

A month scarcely now elapses during which the public sympathy is not excited by the spectacle or report of some unfortunate being whose repose has been destroyed by the dreadful apprehension of suffering from Hydrophobia; or whose life sacrificed to the still more terrible reality. Yet, in open contempt of the public safety and decorum,—in flagrant violation of those claims which the governed possess upon the vigilance and protection of their rulers,—the streets of every town and village in the land, are suffered to swarm with congregations of useless or ferocious dogs, under circumstances alike offensive to the eye and to the nostril.

The Legislature has, indeed, imposed a tax upon these animals. Yet how negligently has the payment of

it hitherto been enforced;—with what facility evaded? And is it not a fact inconsistent with all sound principles of legislation, which far more anxiously contemplate the prevention than the punishment of crime, that the pauper subsisting on the parochial fund, is allowed to support, at the expence of his more industrious neighbour, by day, as many dogs as may be requisite for the successful prosecution of his lawless depredations abroad, by night?

Thus, while the Englishman is forbidden to admit the air and the light of Heaven into his habitation, except on the payment of a grievous and rigidly-exacted impost, he cannot quit his threshold, or enter the house of a friend; and much less approach the dwelling of a stranger, without peril or annoyance from some savage or insidious cur, upon which the enforcement of even the present tax would have long since operated as a sentence of condemnation. He can pursue his way neither in the fields nor on the public roads, without danger from an attack, commonly as sudden as unprovided-for, of these pestiferous animals.

Yet this is an evil against which the powers of the local magistracy are well-nigh unavailing. For, if aroused by the cry of public danger, or the still more powerful call of private duty, a magistrate direct the confinement or seizure of the dogs of the district over which he presides, where is the vagrant who may not, with impunity, violate the salutary prohibition, and set justice and authority at defiance? And the magis-

trate is reduced to the hard alternative of either tacitly acknowledging his impotence, or fearlessly executing the mandate which he has issued, amidst the threats and insults of the vulgar; and at the imminent risk of involving himself in the incalculable vexations and expence of a legal process.

Such abuses should not be tolerated. They are a reproach on the vigilance of the legislature; a stain upon the national character: and form an increasing scourge of the country in which they are suffered to exist. But they have continued, and will continue, in face of the appalling accidents which constantly occur among the people, until some man in power shall, himself, sustain the horrors, and die the miserable death, of Hydrophobia;* and thus too severely expiate by his own blood, the inattention of his colleagues in authority, to the public weal. Then will the sympathy and the zeal of Statesmen and Senators be effectually awakened from their peaceful slumbers. Then, at last, will they be aroused to a full sense of the magnitude of the evil, and to the prompt application of its only remedy. Yet not, perchance, until many an individual of more humble rank, whose life was as precious,—whose loss as irreparable to his family,—as theirs can be, has fallen a lamented victim to the apathy of his rulers.

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* The late Duke of Richmond is reported to have died of Hydrophobia, consequent on the bite of a rabid Fox. Had the fatal wound been inflicted upon his Grace by a Dog in England, the catastrophe, however lamentable in itself, might thus have been productive of lasting good to his country.

Meanwhile, the reader whose attention has never been directed to the increasing prevalence of Hydrophobia;—whose mind never closely applied to a consideration of the only effective mean for its prevention,—may consult the subjoined note.* With a view of alike shortening, and giving effect to, this perhaps not impertinent digression from strictly professional subjects, an attempt is there made to estimate and unfold the extent of the nuisance now feebly denounced;—and to expose the benefits which Society may derive from the imposition and rigorously-enforced levy of such a tax as would ensure the destruc-

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* *Number of Dogs.* The population of the British Islands may be taken at twenty millions. Five individuals constitute a family. To every four families may be reckoned one dog. This, if the returns already obtained by the writer, be correct, is a moderate calculation. Consequently, Great Britain contains *at least, one million of dogs*. Of these, a small portion only are kept as guardians of person or property: the remnant for pleasure, field-sports, *popular and ferocious pastimes, or other purposes yet more demoralizing.*

Evils to the lower orders. The quantity of food *fit for human sustenance,* which a million of dogs daily devour, there are no data for correctly estimating. It must be enormous; and, in seasons of privation, an object of national importance. By the encouragement and facilities which the possession of a dog gives to *Bull-baiting and other inhuman sports, and to Poaching,* it operates as a strong incentive to barbarity and crime among the poor. *To the Public,* Dogs are incessantly objects of annoyance or disgust in the streets;—of danger, to the Equestrian or Carriage-Traveller, on the roads: and, more than all, furnish an inexhaustible and increasing source of the Hydrophobic Poison.

The advantages which would result to the Community, from a great diminution, by heavy tax, of the number of dogs, are these:—The Poor would be better fed; and a powerful instrument of degradation, guilt, and misery, would be wrested from them. A crying abomination would be removed from the streets; accidents, on the public roads, be of much less frequent occurrence: and a check would be at once opposed to an extension of the most terrific of human diseases. Far better were it that dogs should be altogether swept from the face of creation than that one human being perish from Hydrophobia.

tion of useless dogs; and from the investiture of the local magistracy with full powers to issue and execute a sentence of proscription against all such as might be suffered to roam abroad in the frequently-recurring seasons of public danger from Hydrophobia.*

To direct the attention of the Legislature on this humble but momentous subject of inquiry, the present writer, and others far more eloquent than he, have heretofore made an effort, but in vain. They who alone possess the influence and talent to achieve a purpose so beneficent, are either insufficiently impressed with its importance, or, from other inexplicable cause, disinclined to exert their powers. But such is the dreadful character,—such the appalling frequency of Hydrophobia,—that investigation and redress of the crying evil cannot much longer be delayed. The voice of the people calling upon their rulers for protection, must at length be heard. And that man who by the exertion of his eloquence in the senate, shall accelerate an adoption of efficient measures for the repression of Hydrophobia, which vigorous legislation can alone supply, will acquire a claim, as deep as lasting, to the gratitude of his country.

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* A German work, by Krugelstein, entitled *Ueber die Hundswuth*, in which the subject of Hydrophobia appears to have been completely exhausted, was published about four years ago. Dr. Moseley's *Treatise on Hydrophobia; its Prevention and Cure* &c. 4to. London, 1813, is, perhaps, the best work on this disease which British literature possesses. The following publications on the Morbid Poisons may be read with advantage: Hunter's *Treatise on the Venereal Disease*, 4to. London, 1788; Adams' *Observations on Morbid Poisons*, 4to. London, 1807; and Salt's *Essay*, 8vo. London, 1817.

CHAPTER IX.

OF THE INFLUENCE OF THE ATMOSPHERE,—CONSIDERED AS AN EXCITING CAUSE OF DISEASE.

THE Atmosphere exerts an influence either direct or indirect, upon the different organs of the animal economy. It operates directly upon the brain and spinal marrow ;—on the delicate and important mucous membrane which lines the cavities of the mouth, nostrils and various sinuses connected with them, the windpipe, bronchia and their countless ramifications;* —and on the skin which everywhere invests the external surface of the body:—indirectly upon the other organs or systems through the medium of the cerebral mass, of the respiratory and cuticular membranes.

The qualities of the air which immediately affect the brain and spinal marrow, are its extremes of temperature : those which act consecutively upon the body through the medium of these organs,—its varying degrees of moisture and density, and consequently its electrical condition. The respiratory membrane

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* A view, alike lucid and correct, of the distributions of the repiratory membrane is given in Mr. Alcock's valuable communication before adverted to. See *Medical Intelligencer*, No. VII. May 1820.

and skin are principally* and most powerfully influenced by excess of atmospheric heat and cold, and their sudden vicissitudes.

The *direct* influence of high degrees of temperature on the brain and spinal marrow is exhibited in the attacks of apoplexy, mania, and other cerebral affections which frequently result from the sudden or excessive action of the solar rays upon the human head.† The operation of cold, in the paralysis or fatal stupor which long exposure to its intensities notoriously induces.‡ The *indirect* influence of diverse conditions and vicissitudes of the atmosphere, although equally obvious, is less readily explicable. The irresistible feeling of languor and depression experienced by man,

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* Not exclusively: for humidity combined with warmth relaxes,—with cold, exercises a peculiarly pernicious effect upon, the human system. A dry and warm atmosphere, on the contrary, exhibits a genial influence, especially on the delicate, the aged and infirm: and a dry and cold one exhilarates the robust. The electrical condition of the atmosphere relatively to that of body, has also been supposed to affect powerfully the nervous system of man; but on this subject, no facts from which an inference can be safely drawn, have yet been accumulated.

† Hence the frequent occurrence of sudden death among persons exposed to the influence of the sun, particularly in fervid summers, such as those of 1808, 1824, and—5. Apoplexy and mania are no uncommon consequences of the *Coup de Soleil*, in India.

‡ Some important "Observations" on Paralysis from Cold, by Dr. Powell, are inserted in *Medical Transactions*, Vol. V. The drowsiness and fatal lethargy induced by intense cold, are well illustrated in the account of an excursion by Mr. Bankes and Dr. Solander, upon the mountains of Terra del Fuego.—See the *Authentic Collection of Captain Cook's Voyages*, 8vo. London, 1787; and in the affecting detail of the miseries endured by Captain Franklin, Dr. Richardson, and their party on their return from Copper-mine River to Fort Enterprize.—See Captain Franklin's *Narrative of a Journey to the Shores of the Polar Sea*, Vol II. London, 1824.

and the signs of restlessness evinced by the lower animals, in gloomy, damp and variable, or tempestuous weather, sufficiently attest it.*

The separation of an aqueous fluid from the blood in the form of vapour, constitutes an important function of the respiratory membrane. The application of sudden or excessive cold checks this salutary process of exhalation, and the secretion of mucus by which the membrane in question is naturally lubricated. The *direct* influence of cold upon it, therefore, is to produce a state of dryness and excitement varying in degree from simple irritation spontaneously terminating in increased secretion, to active disease which, if not subdued by art, may induce fatal effusion, ulceration or abscess ;—from slight catarrh to the most violent inflammation of the respiratory passages. By the *indirect* action of cold applied to the pulmonary membrane are induced a loaded state of the vessels of the lungs, deranged action of the heart, and torpor of the brain and digestive organs. These effects are probably determined by the obstacle which the irritated membrane presents to the due arterialization of the blood ; or by the pulmonary congestion

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* The pains felt by the human subject in a limb which has, years before, suffered from severe mechanical injury or rheumatism, and the "twingeing of corns" on the approach of wet and stormy weather, can only be explained by the influence of atmospheric changes upon the brain and spinal marrow. That many animals, both quadrupeds, birds, fishes, and insects, have a presentiment of these changes before their effects are actually manifested, no curious observer of the migrations and habits of many individuals of these various classes, will, for a moment, doubt.

which obstructs the free return of this fluid from the various regions to the heart. Thus, habitual shortness of breathing, morbid conditions of the lungs or absorbent system,—of the heart or brain,—asthma, indigestion and dropsy, are frequent consequences of the continued operation of cold, especially when combined with moisture, on the respiratory passages.*

It is not here requisite to investigate the precise mode in which the animal body suffers from exposure of its external surface to the extremes or sudden vicissitudes of temperature. Cold, it will suffice to observe, checks the discharge of watery fluid from the blood by the process of insensible perspiration; corrugates, and repels their contents from, the minute vessels of the skin; and, driving it in upon the internal organs, excites or maintains a state of congestion there. External warmth, on the contrary, stimulates to increased action the exhalant vessels; and, by determining or recalling the blood to the surface, prevents or relieves the fullness of the interior. The operation of sudden vicissitudes in these two qualities of the atmosphere is equally intelligible.

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* As it is impossible to separate those morbid affections of the respiratory membrane directly induced by the action of cold, and those of the other organs, which this action indirectly excites, from the same morbid conditions consequent on chilling of the external skin;—as cold is very rarely applied to one without implicating the other;—and as the treatment of such diseases is not regulated by a regard to the peculiar mode of their production,—the whole will be reviewed together in considering the indirect operation of temperature on the various organs through the medium of the skin.

The baneful or deleterious consequences of sudden application of cold to the heated body, and of warmth to a frozen limb, constitute familiar illustrations of their influence in the two opposite extremes.

The *direct* operation of exposure to the inclemencies of weather and abrupt variations of temperature, upon the surface of the human body is conspicuously seen in the discolorations, chaps, freckles, and asperities of skin which persons accustomed to such exposure, so frequently exhibit. These effects, however, are less common and far less momentous than the diseases of the internal organs, indirectly resulting from the action of atmospheric causes on the skin in consequence of the intimate sympathy or connection which exists between these organs and the surface.

The different organs, or systems of organs, which thus *indirectly* suffer from atmospheric influence, are the Cerebral; the Respiratory; the Intestinal; the Glandular; the Renal; and the Muscular.*

The Morbid Affections which result from sympathy between the *Surface and the Brain*, or, as it may be termed, the *Cutaneo-Cerebral Sympathy*, are, for the most part, produced by the action of cold or sud-

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* Dr. James Johnson has achieved much good by calling the attention of professional men to the sympathy which exists between the surface of the body and the internal organs,—and the numerous diseases resulting from it.—See his instructive work on *The Influence of the Atmosphere*, 8vo. London, 1818.—His enumeration, however, of the "Sympathies" is, by no means, sufficiently comprehensive. With the addition of the *Cutaneo-Cerebral*,—*Glandular*, and—*Muscular*, and other alterations now made, it is probably yet very far from being perfect.

den atmospheric changes. They consist principally in general congestion of the brain terminating in apoplexy or Paralysis; or partial congestion inducing that painful affection of the nerves, commonly called Tic douloureux.

Apoplectic Seizures are becoming, and will become, every year more frequent in this country. As the light of education extends, and the spirit of commercial enterprize and speculation is introduced among a people; so will the energies of the brain be more perfectly developed, and the influence of moral causes upon its condition be rendered more powerful and unceasing. To this state of habitual excitement, conjoined with the luxurious habits which civilization engenders, may be attributed the growing prevalence of Apoplexy, Madness, and other diseases connected with increased activity or fullness of the cerebral vessels.

During the intense frosts which sometimes prevail in northern latitudes, death from Apoplexy is far more common than even in the hottest summers. After the observations already made, the mode of production of this disease by cold will be as evident as the inferences which may be deduced from the fact, are valuable; and the practice suggested by it, important. Individuals, of the apoplectic constitution, should, in severe frost, sedulously avoid all those causes which propel the blood, in undue quantity, to the brain, or obstruct its return. These causes principally are, intense application of the mind; full and

stimulating diet; exposure of the body, in a quiescent state, to the action of cold; torpidity of the bowels;—and every effort and position of the body, or artificial mean,—as retention of the breath, stooping, or application of a bulky or tight bandage around the neck,—which may interfere with the regress of the blood from the head by the jugular veins. Such persons will consequently do well, in seasons of severe frost, to allow the brain as much respite as possible from deep thought and the investigation of anxious or perplexing subjects;—to reduce the quantity of alimentary substances, and especially the proportion of alcoholic stimulants;—to preserve a due temperature of the surface and extremities of the body by active exercise, or if that be unattainable, by additional clothing;—to keep the bowels in a free and rather loose state* :—to abstain from inordinate muscular exertions and from stooping; and remove any pressure exercised on the vessels of the neck by the shirt-collar or the cravat.†

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* In congestion of the brain, whether temporary or habitual, the bowels usually become torpid. And this sluggish state of the intestines not only sustains or aggravates the cerebral fullness; but endangers life by the muscular exertion which it may render necessary for the expulsion of their contents. In the act of straining, the blood-vessels of the head and neck are invariably distended. Hence the frequency of sudden death from Apoplexy during the effort of intestinal evacuation: and the extreme importance of carefully obviating, by laxatives, this source of danger, in those who exhibit the signs of an apoplectic tendency.

† That the absurd fashion of wearing stiff and tight bandages round the neck, operates as one among the several concurring causes of the increased prevalence of apoplectic attacks in the present day, is scarcely to be doubted. A degree of pressure which greatly embarrasses the return of blood from the head by the ex-

Such are the precautions which should, during the prevalence of excessive cold, be adopted by all those who have already sustained an attack of Apoplexy, or in whom its occurrence may be apprehended. But when the morbid signs which announce an impending seizure are actually present,—as continued pain, or throbbing of the arteries, of the head, giddiness, ringing in the ears, confused vision, or involuntary starting or numbness of the muscles of the face or extremities,—these precautions will not suffice to avert the danger. Blood should then, without loss of time, be taken from the arm, temples or neck; the bowels be unloaded by a warm and active purgative; and an impulse be given to the circulation in the extremities, by the internal employment of Ammonia or other diffusible stimulant, and by the application of external warmth. If, on the first development of the premonitory signs of an apoplectic attack, measures thus prompt and decisive were at once had recourse to, the awful extinction of human life by sudden and overwhelming effusions in the brain would be far less frequently than at present, heard of or lamented.*

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ternal and even internal jugular veins, will not diminish the volume of fluid thrown up by the more strongly-constituted and elastic carotid arteries. Congestion must be the necessary consequence of impeded regress with unreduced supply. It were greatly to be wished that some leading man in the fashionable world would introduce the salutary practice of wearing merely a ribbon around the shirt collar, to the utter rejection of the padded cravat and the stock.

* In the severe winter of 1813—14, a corpulent gentleman, aged 60, of florid countenance, short neck, and convivial habits, boasted, one morning, to the writer that he was "in excellent health," with the exception of slight giddiness in the

Tic Douloureux, now commonly known, among professional men, by the more correct designation, *Neuralgia*,* is a painful affection implicating some particular nerve or set of nerves. It occurs in paroxysms of dreadful severity: and, although occasionally attended by slight irritative fever, is not essentially connected with febrile disorder or with the characteristic phenomena of inflammatory action.

There are two *Varieties* of Neuralgia, differing not only in the nature of their exciting cause, but in the treatment which they require. Of these, one may be clearly referred to a constitutional; the other, to a local origin. Hence the obvious distinction into Constitutional and Local Neuralgia.

Constitutional Neuralgia is by far the most frequently observed. The *Causes* which *predispose* an individual to its attacks, are perfectly unknown. Those by which it is *excited* are, principally, atmospheric

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head and a sensation of numbness and tingling in the fingers of one hand, for which he could not account. The pulsations of the artery at the wrist were full and irregular; and the vessels of the eye loaded. An earnest exhortation that he would immediately lose blood, and postpone the anticipated enjoyments of an evening party, was rejected with sarcasm. On the same night, while animated by the company of his assembled friends, the unfortunate man suddenly reclined against the back of his chair, and died ere the writer, who sat next him, could tear open the shirt-collar. Irregularity of pulse in persons not habitually subject to it; and a sense of increased volume in the tongue or fingers, may be ranked among the precursory signs of an apoplectic seizure.

* It had previously been known also by the names of *Faciei Morbus Nervorum Crucians;—Trismus Dolorificus;*—and *Hemicrania Idiopathica.* The appellation, *Neuralgia*, derived from the Greek, and signifying *Nerve-ach*, was first introduced into British literature by the present writer, in an Essay; to which allusion will subsequently be made.

cold and damp, and sudden vicissitudes of temperature. Hence persons returning from a warm to a chilly and humid climate, Gamekeepers, Gardeners, Coachmen, Cooks, and all such as by occupation or residence are exposed to the operation of these causes,* —most commonly suffer from Neuralgia. The *proximate Cause* of the affection is obviously some principle of irritation operating upon the nerve affected; and probably consists in a state of congestion at the root or origin of such nerve from the cerebral mass.†

The Signs of cerebral congestion which always exist in this variety of Neuralgia, and constitute the essence of the disease, will be *aggravated* by intense study, grief, and the other depressing passions;—by intemperance and all agents which directly or indirectly trouble the functions of the brain. And the derangement of the intestinal canal, evinced by the unnatural condition of the tongue and irregularity of the bowels, which is commonly observed in Neuralgia, and evidently results from the cerebral irritation, will, if it be suffered to continue,—re-act upon, ex

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* Twelve persons, suffering from constitutional Neuralgia, have been observed by the writer. Among these were a gentleman who had returned to England after several years' residence in the West-Indies, a gamekeeper, a gardener, a mail coachman, a man exposed by his engagements among canal-boats,—and two females, subject both by peculiarities of abode and occupation,—to the influence of cold and damp.

† The existence of this morbid state has not yet been clearly proved. It is, however, rendered highly probable both by the pathological researches of Dr. Sanders, of Edinburgh; and by the effect of the local and constitutional remedies most successfully employed in the treatment of Neuralgia.

asperate, and render more unyielding, the original disease. The paroxysm of Neuralgia is constantly excited, and its severity increased, by powerful mental emotions, and, yet more conspicuously, by exposure of the surface upon which the morbidly-sensitive nerve is distributed, to a current of cold air.

The Morbid Affections with which Neuralgia may be *confounded*, are a Rheumatic Pain in the nerves of the face;—the Symptoms resulting from the presence of a carious Tooth;—and the Existence of Disease or of some transient source of Irritation in the Sinuses of the Frontal or Maxillary bones. The *First* of these may, however, be, in general, readily distinguished from Neuralgia, by the comparative mildness of the suffering which it inflicts;—by its gradual exacerbation or return at fixed periods, so widely different from the abrupt, intolerable, and irregularly-recurring paroxysm of Neuralgia;—by the diffusion of the pain over the whole cheek, which, in Neuralgia, is distinctly confined to the larger nervous branches;—and by the facility with which it ordinarily yields to simple treatment.* The *Second* may be discriminated by the signs which indicate the presence of a carious tooth; and by the relief almost directly con-

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* This "rheumatic pain in the face" as it is usually designated, will be removed by the exhibition of a brisk emetic on the recurrence of the paroxysm,—with a subsequent purgative; and by the employment of the Cinchona, twice or thrice a day, and of Opium at bedtime. It is commonly ascribed to the irritation of carious teeth; but will not be permanently relieved by their removal. Abstraction of blood from the gum, by leeching or incision, often affords a temporary mitigation.

sequent on its extraction.—The diagnosis of the *Third* is more difficult: yet, even here, the close observer will not be wholly destitute of light for the direction of his judgment: since, in inflammation of the membrane of the frontal or maxillary sinus, or in irritation acting upon it from an external cause, pressure on the supra-orbitary or infra-orbitary branches of the fifth pair of nerves, will be productive of neither the insufferable agony, nor of the re-excitement of the paroxysm, which almost invariably result from such pressure in Neuralgia: and there are none of those electric shocks,—those convulsive startings,—of the muscular system which, with the effects of compression on the morbid nerve, so strongly characterize Neuralgia as to constitute its diagnostic signs.*

In the *Treatment* of Constitutional Neuralgia, the obvious indications are, to relieve pain;- -to avert or remove all those circumstances by which the distressing

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* A robust medical gentleman, aged 30, had suffered, during thirteen years, repeated attacks of pain above the *left* eye-brow. In severity as in situation, it strongly resembled supra-orbitary Neuralgia. The last violent seizure occurred in the spring of 1828; and yielded to active treatment after a long and obstinate resistance. From this period, the pain was principally felt at the root of the nose; and a discharge of mucus constantly took place from the right nostril. In October last, this gentleman, to his great astonishment, squeezed a Snail from a circular inflamed orifice in the *right* ala nasi. It was an *Helix hortensis*, about half an inch in length and quite lively. By the aid of a microscope, four minute *Acari* were seen, traversing with great rapidity, its body. Since then, Mr. B. has enjoyed a perfect immunity from suffering; and up to the present time—March 1829—has experienced no return of the Neuralgia-like paroxysms. In this case, the more exquisitely-marked characters of Neuralgia were not observed: and pressure on the supra-orbitary nerve was not productive of those agonizing sensations and consequences which always result from it in the genuine disease.

symptoms may be sustained or aggravated;—and to effect a permanent alteration in that state of the vascular and nervous systems which constitutes the proximate cause of the affection. Hence, the treatment may be distinguished into the Palliative, the Auxiliary, and the Essential Plans.—The *Palliative Remedies* are principally local. They consist in the application of leeches, of external warmth in the shape of fomentations, and currents of steam directed on the part; or stimulating or anodyne embrocations or plasters. They exert a merely temporary influence, either by diminishing the sensibility of the morbid nerve, or protecting from the impression of cold or of atmospheric changes, the surface on which it is distributed.† They may be prescribed, with advantage, to procure respite from suffering until time has been allowed for the operation of more effective measures. From the application of blisters to the seat of pain, increased irritation, rather than relief, usually results. The internal employment of Opiates, as a mere Palliative, should also be avoided. By interfering with the biliary secretion, and constipating the bowels, it deranges the functions of the intestinal canal; and thus keeps up, or augments, the cerebral congestion and disorder from which the morbid affection has directly emanated.

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† Simply on this principle seems to operate the plaster of common pitch; which, some years since, was announced with such extravagant pretensions, as a remedy for Neuralgia.

Under the *Auxiliary Treatment*, are comprehended an attention to, and the removal of, all those exciting causes, and conditions of the system, whereby the duration of the disease may be prolonged, or its severity aggravated. Respite of the brain from the fatigues and cares of business and from the influence of depressing passions;—defence or abstraction of the body from the operation of a damp or chilly atmosphere by clothing, or by confinement to a regulated temperature, or a change of residence:—and correction, by emetics, purgatives, or dietetic restrictions, of that unnatural state of the intestinal functions which, resulting from cerebral irritation, invariably accompanies Neuralgia,—are the principal means by which recovery may be accelerated. General blood-letting, although rarely essential, will also sometimes operate as a valuable palliative or auxiliary. By unloading the brain, it, under certain circumstances, not only mitigates pain and tranquillizes the perturbation of the system; but increases its susceptibility to the operation of more powerful and permanent remedies. In this, as in all other cases connected with cerebral congestion, blood will obviously be drawn, with greater economy and more decided effect, from the temporal or jugular vessels than from those of the arm.

The great principle in the *Essential Treatment* of Neuralgia, is to restore the equilibrium of circulation, by unloading the vessels of the cerebral mass, or removing their morbid condition; and by giving additional energy and impulse to the enfeebled action of

the blood-vessels on the surface, and in the extremities of the body. This object, Depletives and Counter-irritants, as Blood-letting and Blisters;—the more powerful Alteratives, as Mercury, Belladonna, and Arsenic; and Tonics, as Cinchona, Iron, and the Shower-bath, or a judicious combination or succession of several of these agents, will most effectually accomplish.

I. *General Blood-letting* is not commonly required in Neuralgia. It may, however, be employed with advantage, as a preliminary measure, in robust and full-blooded persons: especially if the pain or cerebral disturbance assume a character of extraordinary vehemence or activity. But the evacuation should neither be profuse nor frequently repeated: for not only will the constitutional depression which always accompanies the disease, be increased, but the cerebral congestion itself will be aggravated and the ultimate recovery be consequently impeded, by lavish expenditure of the vital fluid. The abstraction of a few ounces of blood from the temples or neck, by *Leeches* or *Cupping*, will usually suffice to relieve the cerebral vessels. Removal of the hair, and occasional sponging of the head with rectified spirit or ether, will still farther reduce, or keep down, their increased action; and a recurrence of their loaded state may, with great certainty, be obviated by the application of a *Blister* or *Antimonial Plaster* to the back of the neck.

II. Of the *Alterative Remedies* in Neuralgia, *Mer-*

cury is, doubtless, the most powerful and unerring in operation. Such, indeed, under ordinary circumstances, is the effect of this valuable agent that it will frequently accomplish the permanent removal of the disease, unaided by preliminary or consecutive treatment. Experience has, however, proved that, in the form of submuriate combined with opium, it exhibits an influence far more prompt and beneficent than when introduced only from the exterior by inunction, or internally without such combination. Calomel and Opium, in this as in several other morbid affections, appear to exert a peculiar—an almost specific—action on the system; which neither, separately administered, is capable of producing. Many instances are on record, wherein as soon as the mouth has decidedly evinced the constitutional influence of the mercury, the Neuralgic paroxysm has suddenly subsided never to return.* Tonics, although not absolutely requisite, may subsequently be administered to repair the loss of strength induced as well by the remedy as by the disease. In very old cases, and under particular circumstances, of Neuralgia, the mercurial treatment, however judiciously or resolutely tried, will prove unavailing.†—The *Belladonna*, re-

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* See the evidence supplied by cautious deduction from numerous facts, in "Observations on Neuralgia." *New Medical and Physical Journal*, Vol. VII.

† Two cases of Constitutional Neuralgia in which the writer depended on Mercury alone, were promptly and permanently cured by it. Of six other cases, wherein it is was employed in combination with blood-letting, blistering, and other remedies, four terminated successfully;—one exhibited only temporary relief; and one yielded neither to this nor to any other treatment.

commended and employed with such confidence and apparent success, in Neuralgia, by Mr. Bailey, has not realized, in other hands, the expectations which the testimony of this enlightened practitioner was calculated to inspire. In some instances, its effect in protracting, or lulling the tortures of, the paroxysm, has been prompt and conspicuously marked. But the writer has yet no experience of its perfect or lasting efficacy, in solitary employment. The sufferings of the patient have sometimes indeed been rather aggravated by the cerebral confusion and terror consequent on the use of Belladonna, than relieved by its sedative operation.—*Arsenic*, although by no means invariably successful, is probably more to be depended on, in the treatment of Neuralgia, than Belladonna. Many estimable writers have attested its efficacy when preceded or accompanied by other remedies. But no instance of its permanent success, without such previous treatment or combination, has, hitherto, been observed by the writer. After local blood-letting, blistering, and mercury, the Arsenical Solution may frequently be prescribed in Neuralgia, as in Chronic Rheumatism and Intermittent Fever, with great and lasting benefit. This, therefore, may be regarded as constituting the precise period at which a trial of the remedy is correctly indicated. Its effect will be rendered more prompt and decisive by combination with a vegetable tonic.

III. In cases where the Neuralgic attack is comparatively slight, or of recent origin, it will occasion-

ally yield to *Tonics* without the interposition of the Alterative, or sometimes even of the Depleting Treatment. Yet the operation of invigorating remedies will invariably be assisted by the previous unloading of the brain and bowels. In general, however, tonics may be employed with much greater effect in removing the debility consequent on Neuralgia than subduing its paroxysms; and in repairing the exhaustion which loss of rest, or depletive remedies or the mercurial treatment may have produced. Of all tonic remedies, the various preparations of *Cinchona*, particularly the Sulphate of Quinia, and the *Carbonate of Iron* in large doses as recommended by Mr. Hutchinson, are obviously to be preferred. The perfect success of either of these agents, prescribed alone, the present writer has repeatedly heard of, but never yet witnessed.* Of the efficacy of the *Shower-bath*,

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* A robust middle-aged man, much exposed to damp and cold, suffered severely, about the commencement of this year, from a neuralgic affection of the facial portion of the seventh nerve. The motion of the lower jaw was difficult and dreadfully painful. In other respects, he was free from complaint or appearance of disease. Carbonate of Iron, administered in drachm doses, thrice a day, was productive of great relief. But no perfect respite was obtained until a blister had been applied to the nape of the neck. This healing prematurely, the paroxyms returned. Another was immediately prescribed with the same decided benefit: and the man is now believed to be convalescent. In a previous case of facial Neuralgia, the chalybeate, pushed to the utmost extent by the writer, completely failed.

To the term, Neuralgia, is commonly added a trivial name indicative of the site occupied by the morbid affection. Hence the distinctions of *Facial*, *Ophthalmic*, *Cubital*, *Digital*, *Intercostal*, and *Sciatic* Neuralgia, according to the peculiar nerve or organ implicated. Under the designation of Facial Nerves, are comprehended the three great divisions of the fifth pair, coming out upon the face from

in combination with vegetable or mineral tonics, he has had re-iterated proof. It may be employed with signal benefit in the commencement of slight Neuralgia, after the operation of local blood-letting and counter-irritants ;—or at the termination of the disease in its severer forms, to remove the depressing consequences, and fortify the system against a recurrence, of its dreaded paroxysms.

Some years ago, *Division of the trunk of the morbid Nerve* with the scalpel was a fashionable practice in constitutional Neuralgia. The attainment of immediate relief was its object: the obvious principle upon which it was undertaken, that of cutting off the communication between the irritated extremity of the nerve and the brain. Like many other expedients, simple and specious in theory, it was frequently altogether abortive, or productive only of transient relief, in practice : and has of late fallen into unmerited neglect. The source of failure, however, lay not in the measure itself; but in the want of discrimination and precise views on the part of those who directed or performed it. Some good may, therefore, accrue from recalling the attention of professional men to an useful but neglected operation ; and by exposing the

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the frontal, infra-orbitar, and mental orifices of the frontal, superior and inferior jaw-bones; and the *portio dura* of the seventh, passing out, and distributed to the temple, cheek, and neck, from the stylo-mastoid hole of the temporal bone. The facial nerves are, probably from the habit of leaving the face uncovered, much more frequently attacked by Neuralgia than those of other regions.

peculiar circumstances under which it may be undertaken with temporary or permanent success.

There are only two periods at which a surgical operation for the relief or cure of a local disease, of constitutional origin, is rigidly admissible. These periods are, *First*, when the local affection, from the intensity of suffering inflicted by it, is no longer tolerable; or, from other attendant circumstance, becomes fraught with immediate danger to life; ere the cause, existing in the constitution, can be removed by the more circuitous route of internal medicine. Under these circumstances, it will sometimes be expedient to obtain by the knife a truce,—an interval of respite,—from suffering or danger; of which, advantage may be taken to subdue the original disease: and, *Secondly*, when, as occasionally happens, the local symptoms, from morbid association or change of structure, still exist after the constitutional derangement from which they originally emanated, has been rectified,—and the consequence survives the destruction of its cause.* The applica-

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* This argument may be strikingly illustrated by a reference to the peculiar and only circumstances under which the operation of *Tapping* can with propriety be recommended in Ascites, or Abdominal Dropsy, consequent on diseased liver. The two following cases, selected with this view, will require no comment. A middle-aged man, of intemperate habits, was attacked with ascites and general dropsy complicated with an enlarged liver. The usual remedies had been administered in vain. At length, the accumulation of fluid became so great as to cause by its mechanical pressure on the stomach and diaphragm, constant rejection of food, and alarming difficulty of respiration. *Unless relief had immediately been obtained, the poor fellow must have inevitably sunk.* In order, therefore, merely

bility of this reasoning to the morbid conditions of the brain and nerve, in constitutional Neuralgia, is at once evident. In cases of aggravated suffering, division of the nerve skilfully accomplished, will be productive of temporary relief. And where, from long duration, or peculiarity of condition in the nerve itself,* the disease opposes an insuperable resistance to all constitutional treatment, a more valuable, because a permanent, resource will frequently be afforded by the scalpel.

The preceding strictures on division of the nerve, apply exclusively to constitutional Neuralgia. But when the morbid affection is attributable to a local origin,—when it has arisen from a punctured or lacer-

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to gain time, tapping was proposed; and more than fifty pints of serum drawn away. The fluid re-accumulated with such rapidity that the operation was again twice performed to *avert impending danger ere effective constitutional remedies could be brought into action.* Brisk mercurial purgatives and inunction, tonics, and diuretics, meanwhile, were sedulously plied; and fortunately began to tell just as the man had abandoned himself to despair. In a few days, he was completely unloaded by the natural outlets; and, twenty years subsequently, he exhibited all the characters of vigorous old age.—In the spring of 1824, a young woman, labouring under abdominal dropsy, consulted the writer. Her countenance and history indicated the existence or effects of diseased liver. The Surgeon who had treated the case with great energy and judgment, declared an opinion that he had gone far to remove the cause; but that the consequences would obstinately resist, as they had already done, all constitutional treatment. The liver disease had, in fact, been well-nigh cured; but the load of accumulated fluid was so great that the oppressed absorbents could not be brought to operate upon it. *Here the consequence obviously survived the removal of the cause.* After a few unavailing efforts to stimulate the absorbents by Mercury and Diuretics, a large quantity of limpid yellow serum was drawn off by tapping; and the disease has never reappeared.

* Some very sensible remarks on this subject are made by Dr. James Johnson, in his work on *The Influence of Civic Life*, &c. 8vo. London, 1818. See page 39.

ated wound,—Section of the nerve, at some point between the seat of injury and the sensorium, should be promptly performed. Until this has been done, constitutional treatment will obviously be unavailing in *Vulnerary Neuralgia*. A local remedy can in general alone effect the removal of a purely local cause. The correctness of these views, and the success of the practice founded upon them, are illustrated by numerous facts.* If the operation be long deferred after the infliction of the injury; or the symptoms prove unusually violent, the brain and spinal marrow will frequently take the alarm; re-act upon, and exasperate the local affection; and thus, after all, render constitutional remedies necessary for its permanent removal. The truth of this observation will be most clearly exposed by a reference to the last case which Mr. Wardrop has communicated.

In operating on the nerve affected with Neuralgia, a portion of it, whenever such measure is practicable, should be cut out, with a view of preventing that speedy re-union of the divided extremities; which, by re-establishing the communication between the seat of injury and the brain, might subject the patient to a recurrence of the Neuralgic affection. This

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* See Cases of Vulnerary Neuralgia, permanently cured by cautery, or division, of the wounded nerve, or amputation of the injured member: Verpinet, *Journal de Médecine*, Tome X. Messidor, Ann. XIII;—Denmark, *Medico-Chirurgical Transactions*, Vol. IV; Wardrop, *Same Work*, Vol. VIII;—and Same Author, *Same Work*, Vol. XII.—Mr. Wardrop's last case is peculiarly instructive.

precaution was taken by Mr. Abernethy,* in an operation on one of the digital nerves for the cure of constitutional Neuralgia. Whenever the nerve is so situated as to be inaccessible to the scalpel at any point between the seat of irritation or injury and the brain, in otherwise incurable constitutional or in vulnerary Neuralgia, amputation of the whole or of a portion of the limb is the only remedy which the practitioner can propose, or the patient submit to, with a prospect of lasting or decisive benefit. The success of this practice is well elucidated by Mr. Denmark and Mr. Wardrop, in the cases to which an allusion has just been made.

The preceding imperfect sketch will not be inaptly terminated by an abstract of the writer's experience in the treatment of Neuralgia ;†—and by an enumera-

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* See his *Surgical Observations*. Part Third, p. 203.

† In addition to the twelve cases actually treated, two others have been cursorily observed, by him. Of the *former*, five occurred in the female; seven, in the male. Seven were cases of *Facial* Neuralgia; one, *Ophthalmic;* one, *Cervical* (left accessory nerve); and three, *Sciatic*. *Cured*, two, facial and cervical, by *Opium and Calomel;* one, Ophthalmic, by frequent *Blood-letting and Calomel;* three, sciatic, *by Leeching, Blistering, Calomel and Opium*,—with *Cinchona* in one instance, and *Belladonna* in the other two; one, facial, by *Sulphate of Quinia;* and one, facial, by *Carbonate of Iron* with *spinal Blisters*. *Relieved* temporarily, one, facial, by *Calomel and Opium, Division of the inferior maxillary nerve*, and *Arsenic with Cinchona*, in succession. *Incurable*, three all facial: in one, *medicine of every kind*, and *division of the nerve had* failed; in a second, mercury was recommended; but event unknown: the subject of the last, after the ineffectual trial of *all the more powerful internal and external remedies*, is, at this moment, a dreadful sufferer. One of the Sciatic cases assumed, towards its close, the character of spinal inflammation, with tetanic symptoms and delirium. The man, cured by the Quinia, had subsequently a pulmonary attack with all the signs of hepatization of the lung and impending phthisis. The recovery by the

tion of the principal works and essays in which it has been discussed.*—These productions are unfortunately few; and little commensurate, in spirit or execution, with the interest and importance of the subject. A comprehensive Monograph on Neuralgia is wanting to fill up an obvious void in medical literature. The assurance that this deficiency will ere long be supplied,† has caused its pathological and literary history to be passed over more lightly here than it would otherwise have been.

The diseases which arise from connection between the Skin and Organs of Respiration,—the *Cutaneo-Respiratory Sympathy*,—are an Irritative or Inflammatory action of the various portions of the mucous membrane which lines the respiratory passages, and of the substance and external covering of the lungs

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Carbonate of Iron is too recent to justify any opinion as to its permanence. Of the two merely *observed* Cases, one was *Spermatic Neuralgia*, and treated with little relief by very large doses of *Cantharides*. The other, *Neuralgia of the integuments of the right side of the chest*, was attributed to liver-disease; and *Bloodletting*, *Blistering of the side*, and *Mercury*, were actively but in vain prescribed.

* See Meglin, *Recherches et Observations sur la Névralgie faciale*, 8vo Paris, 1821.; Bailey, *Observations relative to the Use of Belladonna*, &c. 8vo. London, 1818; and Hutchinson, *Cases of Tic Douloureux*, 8vo. See also the Article, *Névralgie*, in the *Dictionaire des Sciences Médicales*, T. XXXV; the observations of Darwin in the 3rd Vol. of *Zoonomia;* of Pearson, Corkindale, Clark, M'Kechnie, and Hill, in the 3rd, 4th, 5th, and 7th, Vols. of the *Edinburgh Medical and Surgical Journal;*—and those of Palmer, Bailey, Arrowsmith, and Hamilton, in the 7th, 8th, 9th, and 10th, of the *New Medical and Physical Journal.*

† By the author's intelligent and accomplished friend, Dr. Loudon, of Leamington-Spa; than whom no one can be better qualified by his professional and literary acquirements, for such an enterprize.

and of the heart. The Inflammatory may be subdivided into the Acute and Chronic. Of the simply Irritative Affections, the most common are Catarrh and Asthma. The Inflammatory, those of the Larynx, the Windpipe, and Bronchia,—of the Lungs, Pleura, and Pericardium,—and their diverse morbid consequences. In all these latter affections, and particularly in Bronchitis, the chronic form of inflammation frequently occurs, and is distinct in character.

Catarrh, or *Cold* as it is ordinarily designated, consists in an irritative or sub-inflammatory action of the membrane which invests the cavities of the mouth and nostrils, of the lachrymal duct, the maxillary and frontal sinuses, the throat, Eustachian tube, windpipe and bronchia. In severe cases, the external membrane of the eye is ordinarily implicated. The ennervating habits of luxury, sloth and confinement to highly-heated rooms, are the causes which especially *predispose* the system to attacks of catarrh: those which *excite* it, sudden or continued applications of cold or damp to the surface and particularly to the feet. If it be not aggravated by imprudent exposure or intemperance, the affection commonly terminates, in a few days, by increased secretion. In subjects who exhibit a predisposition to such diseases, or have employed stimulants for its cure, Catarrh will frequently run on into suppuration of the tonsil or Quinsy, or into active inflammation of some portion of the respiratory membrane or of the lungs themselves. Chronic inflammation, with consequent thickening

and ulceration of the mucous membrane, has been sometimes, although rarely, the result of neglected Catarrh in diseased subjects.

The Phenomena of Catarrh exhibit great variety. They are modified according to the precise seat which the affection occupies. Thus, when the membrane which lines the nostril and lachrymal duct, and that which covers the anterior portion of the eyeball, are principally implicated, sneezing with a profuse discharge of mucus from the nose and an inordinate secretion of tears from the lachrymal gland, are observed. Irritation of the membrane of the maxillary sinus is characterized by face-ach;—of the frontal sinus, by a dull sense of pain and tightness across the forehead;—of the fauces and Eustachian tube, by soreness of the throat, pain shooting from thence to the ear in the act of deglutition, and dullness of hearing;—of the summit of the windpipe, by hoarseness;—of its lower part and of the bronchia, by dry irritating cough. Most frequently, the affection commences in the nostrils or throat; and will travel from one to the other or to the chest, with great rapidity, and sometimes resume its original seat, ere it perfectly subside.

The *Treatment* of Catarrh is very simple. It consists in restoring the functions of the skin which have been repressed by cold, to their natural activity;—in soothing the irritated state of the respiratory membrane, and removing every agent whereby it may be kept up;—and moderating the impetus of circulation by reduction of the supply of blood. Immersion of

the lower limbs in hot water, confinement to the unvarying temperature of bed, and copious ingestion of weak and tepid fluids;—respiration of a warm atmosphere untainted by smoke or dust, occasional inhalation of the vapour of hot water;—abstinence from solid food, and a brisk purgative combined with antimony,—will most effectually accomplish these respective indications.

The popular remedy for colds, consisting in the internal exhibition of some powerful stimulant, is the more dangerous, since it assumes an aspect of rationality, and is followed by occasional success. Its operation however, depends upon circumstances which no foresight can calculate and no power control. If the vessels of the surface be stimulated and the suppressed perspiration consequently restored by it, the effect will be salutary. Failing as it frequently does, to achieve this object, the stimulant will only transform a simple and comparatively harmless, into a severe and perilous disease.

In the adoption of *Preventive Measures* against Catarrh, popular errors equally flagrant and injurious, are very generally committed. Persons peculiarly sensible to the influence of cold and damp, are accustomed to seek protection in excess of clothing or an unnatural state of confinement. That by improper exclusion of the external atmosphere, Man is only rendered more susceptible, and that by judicious and persevering exposure, he may acquire a perfect insensibility, to its noxious operation,—are truths not

more important than demonstrable. On this principle, therefore, they who habitually suffer, or apprehend a recurrence of suffering, from peculiarities of atmosphere, without prospect of relief by migration to a more genial climate, should, by sponging with cold water, and exposure to the external air in all its variations of density and temperature, gradually inure the system to its impressions; and thus effectually fortify it against them. To the cases of the aged and infirm and of those labouring under incurable disease of the internal organs, this salutary discipline would, or may, be obviously inapplicable.

Inflammation of the Tonsil, *Cynanche Tonsillaris* or *Quinsy*, the frequent consequence of exposure to cold, generally commences with chilliness and slight rigours, soreness of the throat, and pain and difficulty in swallowing. If not speedily subdued, it will terminate in suppuration. The swelling, under these circumstances, is sometimes so large as to interrupt deglutition, and oppose a formidable obstacle to the process of respiration. When the abscess has burst, and discharged its contents, all danger is usually at an end.

In the management of Tonsillar Inflammation, a lamentable deficiency of clear and correct views is too often exhibited even by experienced men: and the patient is consequently involved in much unnecessary suffering, or brought into danger, by the indiscriminate admixture of the various remedies which the different stages of the disease may require. Evacuants, blisters, gargles, poultices, and tonics, are fre-

quently jumbled together, or tried in disorderly succession, without any accurate calculation of the objects which each is intended to accomplish. A little reflection will serve to extricate the practice from this confusion; and expose the precise circumstances to which these remedies are respectively and precisely applicable.

The principal indications in the *Treatment* of Quinsy, are to prevent the formation of matter;—to expedite the process of suppuration, and palliate the suffering attendant on it, when resolution is no longer practicable;—to avert the dangers of inanition or suffocation, if the volume of the tumour be such as to intercept the passage of food or air;—and, finally, to recruit the forces of the system when exhausted by an arduous or protracted struggle.

I. Reduction of the inflammatory action, in Quinsy, may often be accomplished by such a dose of Calomel and Antimony, as will produce both an emetic and purgative effect; by leeching, fomenting, and blistering the throat; and by large internal administration of Guaiacum* repeated at short intervals. This desirable object will rarely be attained after the lapse

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* By the administration of eight or ten grains of Calomel with two of Emetic Tartar, the writer has repeatedly cut short the progress of Quinsy in adult persons, who had before suffered severely from the disease under every other variety of treatment. Much of the success of this mean will depend on its early administration. It should be followed by a two-scruple dose of the *Resin of Guaiacum* every four hours. Such is the efficacy of the Resin, thus administered, in the inflammatory stage of Quinsy, that it has been deemed by some experienced practitioners a Specific. It operates principally by the skin and bowels.

of twenty-four hours from the announcement of the inflammation.

II. The vigorous attempt at resolution failing, all active evacuant remedies should be laid aside. Continued beyond this period, they only exhaust the strength; retard, without averting, the process of suppuration; and aggravate the tortures of the patient. The pain should now be tranquillized, and the skin kept moist, by small doses of Opium combined with Antimony or Ipecacuanha, and Acetate of Ammonia; and suppuration accelerated by gargling with hot water, and the external employment of fomentations and oily poultices.* Acid or astringent Gargles should, on no account, be prescribed in the suppurative stage.

III. In general, the abscess may be allowed to burst spontaneously. But when deglutition or breathing is much impeded by the pressure of the tumour;—when its volume is such as to endanger life by suffocation in the event of its rupture during sleep,† an artificial evacuation of its contents may become necessary. The operation, however, should be delayed as long as possible. When once determined upon, the thinnest and most prominent point of the tumour should be selected

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* Fomentations of hot water employed alone, or aided by the simple evaporating poultice of bread and water, reduce inflammatory action. Followed by a greasy poultice which prevents the escape of heat, they stimulate the vessels of the inflamed surface, and accelerate the suppurative process. This seemingly trivial but really important distinction is too frequently lost sight of in practice.

† Accidents of this kind have occurred. During sleep, the contents of the abscess will pass readily into the windpipe, and deluge the bronchia, through the then imperfectly-guarded aperture of the glottis.

for the incision. A repetition of the inflammatory action and of the sufferings of the patient will sometimes result from its premature or unskilful performance.

IV. Nutritious food and fresh air are the most effectual and safest Tonics. Recovery from exhausting Quinsy will, however, be expedited by an addition of the Cinchona. An astringent Gargle may also be employed with advantage to repair the local mischief. The best *Preventives* which persons subject to tonsillar inflammation, can adopt, are regular exercise, and sponging of the head and throat every morning with cold water.

Under the designation, *Asthma,* many widely different morbid affections are commonly confounded. It has thus been made to include all cases of disordered respiration, however dissimilar in seat and character. Asthma, by the most enlightened writers on the subject,* is divided into the Convulsive or Periodical, and the Continued. An illustration of the former only will be attempted in the present sketch. To the latter, *Dyspnœa,* or Difficulty of Breathing, is a term more correctly applicable. This is usually connected with some obstruction or morbid change of the windpipe, lungs, heart, intestinal canal or liver, or its consequences; and may at once be distinguished from convul-

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* See Dr. Bree's *Practical Inquiry into Disordered Respiration*, 8vo. London, 1807; a work which, with some physiological and pathological errors, exhibits many valuable facts and sound views. It is, perhaps, the only Monograph on Asthma, in the English language, which will compensate for the labour of perusal.

sive Asthma, by the absence of the periodical character. As many varieties of Dyspnœa might be enumerated as there are distinct forms of those structural alterations of the organs of the chest and abdomen by which it is induced.

Convulsive Asthma is a disease which, from its strongly-marked character, periodicity of recurrence, and the absolute or comparative exemption from complaint or suffering in the intervals between the paroxysms,* cannot readily be confounded with any other. It consists in a violent and convulsive action of the muscles engaged in respiration. It may be regarded as a Genus, comprehending two distinct species,—the Idiopathic or Original; and the Symptomatic.† Of the

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* When continued difficulty of breathing is experienced by the asthmatic in the absence of the paroxysm, some morbid condition or change, as congestion or hepatization, may be suspected to have taken place in the substance of the lungs; or effusion of serum into the cavities of the chest, or into the cellular structure of the pulmonary organ. This latter state is distinguished by the name of *Dropsy of the lungs.* Under such circumstances, the disease no longer retains the character of simple Asthma; but exhibits one of the most commonly-occurring forms of its different complications.

† Convulsive Asthma is farther divided by Dr. Bree, into four species, respectively dependent on the irritation of *Effused Serum,*—and of *Aërial Acrimony in the lungs;*—on *Irritation in the Stomach or in some of the Abdominal Viscera,*—and upon *Habit.* The latter, he adds, is "caused by Sensation after Irritation has been removed from the thoracic or abdominal viscera." To this arrangement there are some objections. It is too complex: and the exciting cause of the first species is not accurately defined. The "effused serum," represented as constituting this cause, is, it should be recollected, merely a consequence of previous irritation. The influence of the stomach upon the production of mucous Asthma, is also over-rated. Disorder of this organ may generally be regarded rather as an aggravating than an exciting cause of the paroxysm in the idiopathic species: nor is the introduction of Irritative and Nervous Asthma as distinct species,

Original, there are, again, two Varieties, determined by the peculiar nature, and mode of application, of their exciting causes.

The *Idiopathic Species* of Asthma is most commonly met with. It results from some irritation directly applied to, or congestion indirectly produced in, the respiratory membrane: and the convulsive paroxysm is evidently an inordinate effort of the respiratory muscles to expel either the irritating agent, or the mucus which has been poured out from the vessels, in consequence of the irritated or loaded state, of the bronchial membrane. Where the exciting causes, as atmospheric vicissitudes, cold or damp, have been extensively applied to the surface, congestion will take place, not only in the mucous membrane, but in the whole structure of the pulmonary organ: and thus, the secretion being profuse, the paroxysm will terminate in copious expectoration. But when such cause, as dust,* tobacco-smoke, or acrid vapours floating in the atmosphere, is directly applied to, and irritates the mucous membrane alone, it will usually be expelled by the respiratory efforts, ere general fulness of the pulmonary vessels, and the increased secretion resulting from

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quite consistent with sound principles of classification. The present writer has, therefore, presumed to deviate somewhat from the arrangement of his estimable predecessor; and substitute for it one more simple, although probably little less defective.

* The facts mentioned at page 143 of this work, respecting the noxious influence of Ipecacuanha upon some peculiarly-constituted persons, form an excellent illustration of Asthma resulting from the action of a respiratory irritant.

such fulness, are provoked: and little expectoration will consequently ensue. This may, perhaps, be regarded as at least a plausible explanation of the origin of the popular distinction into Humid or Mucous, and Dry or Irritative Asthma. They have been regarded as distinct; but constitute mere varieties of one common species. Of the peculiar causes or conditions of the system, which *predispose* it to the attacks of Asthma, little is clearly understood. They apparently depend on some original peculiarity of constitution: for, of the numbers continually exposed to the influence of its exciting causes, few are known to suffer from Asthma.

The paroxysm of *Mucous Asthma*,* in general, commences about midnight. It gradually subsides towards morning; but recurs for several successive nights: and terminates, at length, by a profuse discharge of mucus. Its *exciting* causes are, as before observed, sudden atmospheric vicissitudes operating upon the lungs and respiratory membrane through the medium of the skin; its *proximate* cause, congestion of the pulmonary vessels determining an increased secretion of mucus. The paroxysm will be aggravated by disturbance or fulness of the brain, however induced; and by intestinal derangement. When once the habit has been established, mucous Asthma may

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* The *First* species in Dr. Bree's arrangement.—The designation, *Congestive*, might, perhaps, with greater accuracy and precision, be applied to it.

be excited by irritants directly applied to the respiratory membrane; and even by irritation propagated from distant organs, independently on atmospheric influence.

*Simply Irritative Asthma** observes no regular period. It may occur at any time, on application of one or other of the exciting causes which have been enumerated. It is yet probable that the system may be more susceptible to their impression at one period than at another. As expectoration, however slight, usually takes place towards the close of the paroxysm, the term, *dry*, is not applicable with perfect correctness, to this variety of Asthma. It ordinarily assumes, after re-iterated attacks, the mucous form.†

Symptomatic Asthma‡ is not the consequence of pulmonary irritation. It results from sympathy of the respiratory with the abdominal muscles: and is usually excited by the presence of some irritating cause which these muscles are called upon to expel. Thus, the inordinate effort of expulsion of acrid matter from the intestinal canal, of a gall-stone, or urin-

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* The *Second* Species of Dr. Bree.

† See *Dictionaire des Sciences Médicales*, T. II, Article, *Asthme*. The mode of conversion of simply Irritative into Mucous or Congestive Asthma, is clearly comprehensible. General congestion of the organ which it invests, is the common result of repeated attacks of irritation, acting upon an extensive membrane. And the fact of such conversion, in cases of Irritative Asthma, sufficiently exposes the error which has been committed in establishing it as a distinct species from the Mucous.

‡ The *Third* species of Dr. Bree.

ary concretion, from the biliary duct, from the kidney or bladder, of a fœtus or coagulum from the womb,* has sometimes induced in persons predisposed to it, a paroxysm of symptomatic Asthma.

There is yet another Variety, or rather modification, of Asthma which has been incorrectly considered a distinct species.† The exciting cause is a powerful moral impression acting on a recovered Asthmatic, and perfectly unconnected with the operation of any physical irritant. Thus, a person may experience a paroxysm of difficult respiration, on revisiting scenes where he had previously suffered from Asthma. It constitutes an illustration of irritative actions recurring after the destruction of their original cause; and is referrible only to the mysterious process of morbid association of ideas. The brain must evidently be

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* In 1808, a delicate-looking woman, the subject of *large Bronchocele*, was seized, for the first time, during labour, with an apalling fit of convulsive Asthma. The paroxysm commenced at the instant when the child's head had reached the *os externum:* it subsided on delivery; and did not afterwards recur.—In the same year, a similar accident befel a young woman closely resembling the former, not only in person and circumstances, but *in the possession of a voluminous bronchocele.* It terminated in the same way. Both of these women have since died of tubercular phthisis. How far the tumour, by its pressure on the windpipe, operated here as a concurrent cause, with uterine irritation, in the production of Symptomatic Asthma, it would be difficult to determine. The writer merely records two rare and curiously coincident facts, without presuming to reason upon, or explain them. Nearly akin to these cases, but in general much less severe, is the paroxysm of convulsive dyspnœa, which sometimes alternates with fits of laughter, crying, yawning, or vomiting, in the hysterical female; and to which the term, *Hysteric Asthma*, has by some writers been applied.

† Constituting Dr. Bree's *Fourth* and last Species.

the medium through which this singular affection is produced. The most correct designation, if any distinctive term be requisite for it, is *Nervous* Asthma.

Death rarely ensues during the paroxysm of convulsive Asthma. The affection may recur, for many years, in temperate and otherwise healthy subjects, with little danger or detriment to the system. The life of the incurable Asthmatic is commonly terminated by consumption in youth; and by dropsy of the chest, abdomen or skin, often complicated with morbid alterations of the heart or large blood-vessels,* in more advanced years. These are the natural consequences of pulmonary irritation kept up by repeated attacks of the disease; of the habitual congestion of the lungs, and gorged state of the abdominal veins resulting from it; or of the impediment opposed to

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* "In some young persons, it (Asthma) has ended soon by occasioning a phthisis pulmonalis. After a long continuance, it often ends in a hydrothorax: and commonly by occasioning some aneurism of the heart or great vessels, it thereby proves fatal." See Dr. Cullen's *First Lines of the Practice of Physic*, 1386. The signs, indicating the existence of the latter affections, are almost invariably observed in the *aged* subjects of Asthma: and the correctness of such observation is as commonly substantiated by dissection. Hence, the indefatigable French writer, Rostan, has published a Memoir to prove "that the Asthma of aged people is invariably the symptom of an organic lesion," and, for the most part, of Aneurism of the heart. See *Nouveau Journal de Médecine*, Tom III, p. 1; or *The London Medical Repository*, Vol. XI, p. 145. The memoir in question is enriched with many valuable facts in the pathology of complicated Asthma; but the legitimacy of the inferences deduced from them, is surely questionable. The absence of all those external phenomena which signalize morbid alterations of the heart and aorta, in the *earlier* stages of common convulsive Asthma, clearly sanctions the preceding opinion of the venerable Cullen, that the Asthma is rather the cause, than the consequence, of such deviation from the healthy state in the organs of circulation.

the free circulation of blood through the pulmonary vessels and heart, during the asthmatic paroxysm.

In the *Treatment* of convulsive Asthma, the prominent objects are to mitigate the violence, or shorten the duration, of the paroxysm; and to avert its recurrence. Hence, it comprehends the Palliative, and the Permanent or Preventive Plans.

The leading Principles of the *Palliative Treatment* consist in promoting the expulsion of the offensive agent; and, when that is impracticable, in moderating the useless or exhaustive efforts of the respiratory system. This may be attempted by expectorants; anodynes; or such measures as, like blood-letting or immersion of the extremities in hot water, may directly or indirectly relieve the congestion of the bronchial membrane.

Expectorants and the *Foot-bath* are particularly indicated *during the paroxysm* of *Mucous* Asthma.* *Blood-letting* may also be serviceable in the early attacks when accompanied with general plethora; but its frequent repetition will only, by weakening, predispose the system to the returns of the disease without the

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* The exhibition of Opium during the paroxysm of Mucous Asthma is, on general principles, objectionable: it checks expectoration; and, by favouring the attendant state of cerebral congestion, aggravates the severity, and protracts the duration of the fit. By Dr. Bree, a combination of Ipecacuanha with distilled vinegar is recommended as an expectorant remedy. Dr. James Kennedy, to whom the writer is indebted for many valuable hints in the composition of this work, asserts that he has prescribed inhalation of the vapours of Spirit of Turpentine, with success, as a palliative in the fit of Mucous Asthma.

compensation of even temporary relief.—*Anodynes*, and the *Inhalation of aqueous or narcotic vapours*, are especially applicable to the fit of *Irritative* Asthma: *Opium* and *Blood-letting*, to that of the *Symptomatic*. But the practice, in the latter, must obviously be modified by a regard to the peculiar seat and character of the original irritation. The paroxysm of *Nervous* Asthma will be most effectually shortened by abstraction of the patient from the scene or object of his emotions: as that of the *Irritative* variety, by his prompt removal from the influence of the irritative agent.

The *Prevention* or *Permanent Cure* of *Mucous* Asthma, although difficult and rarely effected, is not impracticable.* The principal indications in its accomplishment, are to fortify the system against the impression of atmospheric vicissitudes, by Regular Exercise, the Shower-bath, and Tonics, especially preparations of Iron, and the Sulphate of Quinia:—to obviate or remove cerebral congestion, intestinal flatulence,† tor-

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* Provided no extensive change of structure have taken place in the lungs or heart. See Dr. Bree's frequent allusions to his own case.

† Distension of the stomach by flatulence forms one of the most invariable and distressing attendants on Mucous Asthma. It operates mechanically, by opposing the free descent of the diaphragm in inspiration; and sympathetically, by aggravating the co-existent disorder of the brain, and deranging the action of the heart. Hence the importance of restriction of asthmatics from the dietetic employment of saccharine and fermenting substances; and the value of alkaline remedies, as the Solution of pure potash, and Lime-water, combined with Tonics, in common Asthma. Where habitual torpor of the kidneys, and a consequent tendency to dropsical effusion, exist, a very valuable auxiliary will be found in the stimulant and diuretic properties of the Tincture of Cantharides.

por or derangement; and guard against the influence of aërial irritants, by which the paroxysm may otherwise be aggravated or excited. These objects can only be attained by cultivation of the sustaining and consoling influence of true philosophy, by dietetic moderation and simplicity, the employment of alkaline and aperient medicines, and respiration of a pure atmosphere.—The cure of *Irritative* Asthma consists in rendering the bronchial membrane insensible to the operation of the diverse aërial agents,—where their presence cannot be avoided,—by inuring it to the action of a more powerful stimulant. For this purpose, the smoke of Tobacco, offers itself as a valuable and commonly grateful resource.* Against the recurrence of *Symptomatic* Asthma, nothing can avail, except vigilant attention to prevent, or promptly subdue, the original irritation in the remote organ from which it has before emanated. The most certain remedy for *Nervous* Asthma will be found in that moral revolution which perfect change of residence, habits, and occupations can alone achieve.

There is one fact in the history of Idiopathic Asth-

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* On this obvious principle of subduing the susceptibility to the impressions of a weaker by the introduction of a more active stimulant, the writer has frequently recommended the night and morning use of the cigar to persons, who, from a morbid sensibility of the bronchial membrane, were painfully affected by exposure to the influence of atmospheric variations or of aërial irritants; which peculiarity of residence or occupation would not allow them to avoid. The success of this practice has most conspicuously demonstrated the correctness of the theory upon which it is founded.

ma; which, although too constant and strongly-marked utterly to elude observation, has not attracted notice at all commensurate with the value of the indications resulting from it in practice. When the disease has been, for some time, established, the brain at length sympathizes with, and re-acts upon, the pulmonary affection. This cerebral derangement is probably first determined by the obstructed circulation of blood in the jugular veins, during the agitation of the convulsive paroxysm; but, after a while, does not subside with the cause which originally produced it, or may be subsequently maintained by the morbid state of the bronchial membrane. Habitual puffiness of the eye-lids and cheek, and the head-ach and stupor which usually precede, and often continue during, the asthmatic fit, sufficiently attest the existence of this state. It is sometimes relieved by hemorrhage from the nose. The paroxysm is sensibly aggravated, and may even be brought on, by circumstances which augment this loaded condition of the cerebral vessels; and may be mitigated or averted by measures directed for its relief. In some cases, it has acquired such an ascendancy as to obscure the original disease, and terminate fatally by extravasation of blood, or serum in the brain.* The torpor and flatulence of stomach

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* An elderly man, who had long suffered from Mucous Asthma, exhibited more prominently than usual, the signs of cerebral congestion. Severe head-ach with drowsiness marked the approach of the paroxysm; which was sometimes

which from such an invariable and conspicuous associate of Asthma, as to be erroneously regarded in the light of an essential cause, may, perhaps, in some instances, be traced to this source; and will, at all events, be mitigated by its removal. The cerebral affection will, on the other hand, be itself exasperated by intemperance, or other cause capable of directly inducing intestinal derangement. The success of the treatment in Asthma greatly depends on rectification of these attendant conditions of the brain and stomach. Neglected, they will not only aggravate each other; but defeat, by their re-action upon the pulmonary system, every effort, however judicious, which may be employed for the re-establishment of its healthy functions.

The Inflammatory Affections of the membrane

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put off, and always mitigated in violence, by the prescription of an active purgative; by application of leeches to the temples, and a blister between the shoulder-blades. Occasionally, the necessity for local blood-letting was obviated by nasal hemorrhage. In the intervals between the paroxysms, the eye-lids were puffed; and the cheek slightly œdematous, without swelling of the legs or other indication of general dropsy; and there was that peculiar lividity of complexion which bespeaks imperfect arterialization of the pulmonary blood. About two years ago, this man, after an unusually long exemption from the asthmatic fit, was seized with symptoms strongly resembling those of congestive Typhus. Leeches were applied to the head, on the writer's morning visit. Before night, the patient had sunk into apoplectic stupor, and expired. To these complications of Asthma with cerebral congestion, Spinal Irritants, recommended by some authors without any clear comprehension of the principle upon which they operate, are peculiarly applicable. See the Article, before quoted, in the *Dictionaire des Sciences Médicales;* and the elaborate Article, *Asthma*, in the *London Medical Dictionary*, by Dr. Parr.

which lines the respiratory tube, and its ramifications, are distinguished according to the precise seat occupied by the morbid action. Thus, the term, Laryngitis, is employed to designate inflammation, commencing in, or principally affecting, the membrane of the Larynx: Tracheitis is applied to that of the Trachea; and Bronchitis to that of the Bronchia. The inflammatory process, however, when acute, is rarely confined to one portion of the respiratory membrane: or, originating in any one, may be gradually or abruptly transferred to an adjacent or remote portion of the same continuous surface. Thus, in Laryngeal inflammation, the summit of the wind-pipe itself is very commonly implicated: and, in Tracheitis, the disease often extends to the membrane of the bronchia. So, also, inflammation commencing in the tonsil, may subside there, and subsequently invade the lining of the Larynx* or the Pharynx, of the Bronchia or the Gullet.

Laryngitis, or *Cynanche Laryngea* as it is more or-

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* See an interesting Case recorded by Dr. James Johnson, in the *Medico-Chirurgical Journal*, Vol. V. p. 1. In this, the laryngeal followed the subsidence of tonsillar inflammation. Hence the danger of employing astringent gargles or other topical repellents in the first stage of Quinsy. Thus also, by extension of the morbid action of the fauces to the glottis, all the phenomena and consequences of Laryngitis or Croup sometimes supervene in ulcerated sore throat. Of this description, was a disease which, seven years since, prevailed as an epidemic in the vicinity of Tamworth, and destroyed many children. In some instances, it assumed a malignant character; and was then highly infectious. Two cases, which fell under the writer's observation, were successfully treated by an Emetic, Calomel Purgatives, Leeching, Blistering, and the internal use of the Mineral Acids.

dinarily termed, does not appear to have been recognised as a distinct affection until the commencement of the present century. The first accurate description of it occurs in a communication of the lamented Dr. Baillie.* It had previously been confounded in practice, with inflammation of the pharynx or the wind-pipe. Since then, it has been illustrated by numerous and valuable contributions: and its pathology, diagnosis and treatment are consequently so well understood that little more than a concentration of the light already thrown upon it, will be required here.

The disease consists in inflammation, original or consecutive, of the membranous lining of the Larynx. It is induced by the application of cold or damp: and exhibits sometimes an acute, sometimes a sub-acute or chronic character.

Acute Laryngitis is a disease alike appalling from the violence of its symptoms and the rapidity of its progress. Neglected or inefficiently opposed, it very soon terminates, often in a few hours, by effusion of serum *beneath*, or of coagulable lymph on the *external* surface of, the laryngeal membrane; consequent contraction or closure of the chink of the glottis; and suffocation. The only diseases with which it can be

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* See *Transactions of a Society for the Improvement of Medical and Chirurgical Knowledge*, Vol. III; or *The Works of Matthew Baillie*, M. D. Edited by Mr. Wardrop. Vol. I, p. 54.

confounded, are acute inflammation of the Pharynx, and of the Trachea; and a non-descript affection, of cerebro-spinal origin, presently to be noticed. The invariable reference of the pain to the Larynx, and the sense of strangulation constantly experienced in Laryngitis, probably constitute the signs which most clearly *distinguish* it from *Pharyngeal Inflammation:* and the uneasy sensation in the larynx, the difficult and painful deglutition and partial swelling of the fauces, by which Laryngitis is characterized, do not occur in *Croup.** Laryngitis, moreover, is a disease of adult, and Croup, almost exclusively an affection of early age. The diagnosis between genuine and *Spurious* Laryngitis will be hereafter traced.

The *Treatment* of Acute Laryngitis must be governed principally by a consideration of the period of the disease. In the first or inflammatory stage, re-iterated Blood-letting, general and local, Blistering, Antimony and Calomel occasionally combined with Opium, can only avail. These means, however, must be

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* See Dr. Farre's luminous "Appendix to the Paper on Cynanche Laryngea," *Medico-Chirurgical Transactions*, Vol. III. p. 323.—The following is his ably-drawn parallel between the morbid appearances observed in Acute Laryngitis and Croup: In the *former*, the mucous membrane investing the epiglottis and margin of the glottis, is inflamed; serum is effused *beneath* it, or coagulable lymph on its *external* surface, by which the rima glottidis is narrowed, or actually closed.—In the *latter*, the mucous membrane of the larynx and trachea is inflamed, and a layer of coagulated lymph is formed on its *internal* surface, from the extremity of the epiglottis to an indefinite extent within the trachea, by which the tube itself is narrowed or actually closed.

plied with the greatest energy and decision.* If the inflammatory action be suffered to run on but for a few hours, the second stage,—that of effusion,—will have arrived: and the operation of Tracheotomy, promptly performed, can then alone rescue the patient from impending death. In this case, the prospect of relief by an artificial aperture into the windpipe is very encouraging: for the inflammation, when implicating, seldom extends beyond, the summit of the trachea; and, consequently, no obstruction of the tube by effused lymph or mucus will exist below the orifice to defeat the purpose with which the operation has been performed.†

Chronic or rather *Sub-acute Laryngitis* is distinguished from the preceding species, by the comparative slowness of its progress during life; and by the con-

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* See the Cases successfully treated by Mr. Wilson, Drs. Roberts and Arnold, in the 5th, 6th, and 9th Vols. of the *Medico-Chirurgical Transactions*. The practice of Dr. Arnold is particularly distinguished by its boldness and decision. It consisted in repeated blood-letting, general and local; and in the exhibition of a ten-grain dose of Calomel every four hours.

† See the Case by Dr. Johnson, before quoted; wherein Tracheotomy was successfully performed. There are three situations, in which an artificial opening may be made for the admission of air into the lungs, when the respiratory tube has become obstructed by accident or disease. These situations are the centre of the thyroid cartilage; the interval which separates it from the cricoid cartilage; and the front of the windpipe. To the operation undertaken in either of the two former sites, the term, *Laryngotomy*, is strictly applicable. Incision of the windpipe itself constitutes *Tracheotomy:* and this, for many reasons, is generally to be preferred. See a Communication "On some Affections of the Larynx, which require the Operation of Bronchotomy," by Mr. Lawrence, in the 6th. Volume of *Medico-Chirurgical Transactions;* written with all the admirable perspicuity, erudition, and profound knowledge of the subject, which characterize the productions of that distinguished writer.

dition of the laryngeal membrane after death. The morbid change does not, as in acute laryngitis, consist in exudation of lymph on the surface of the membrane; but in effusion of serum beneath it; thus producing what the French writers have denominated *Œdema of the Glottis*.* Its *exciting* causes are the same as those of the more active species: it may be the consequence of acute inflammation imperfectly subdued. Like that, it terminates in closure of the glottis and suffo-

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* A most valuable Memoir "On Œdema of the Glottis, or Œdematous Laryngeal Angina," has been published by M. Bayle, in the *Nouveau Journal de Médecine*, Tom. IV. The foreign Department of the *London Medical Repository*, Vol. XI, p. 320, contains a very minute and elaborate abstract, comprehending all the important facts, of the original. This formidable affection may be primary, as when induced by chronic or sub-acute inflammation of the membrane of the glottis; or symptomatic, as when consequent on abscess or other morbid alteration in the neighbouring parts. An example of the primary variety occurs in the First Case, given by Dr. Farre, in the 3rd Volume of *Medico-Chirurgical Transactions*, p. 85; and instances of the symptomatic variety in the two first Cases narrated by Mr. Lawrence, in the communication before adverted to. The essential character of Œdematous Laryngitis is *Difficulty of Inspiration with wheezing, and perfect freedom of Expiration.* It may be distinguished from Acute Laryngitis, by the absence of fever, during life; and by the morbid condition of the membrane of the larynx, after death. This consists merely in "serous infiltration." The borders of the glottis are swollen, thickened, white, and, as it were, tremulous; and so disposed that every impulse communicated from the pharynx inverts them into the aperture of the glottis, which they more or less completely close; and every impulse arising from the trachea, repels them upon the sides of the glottis; and thus clears its orifice. A loose but dense cellular structure, the cells of which do not communicate, retains the effused serum which escapes with difficulty even on pressure, after repeated incisions, of the membrane. Of seventeen cases observed by Bayle, all but one terminated fatally. He recommends, in the *Treatment*, Blood-letting, general and local; Emetics; Irritating Applications to the throat and neck; Antispasmodics. But all these will rarely avail, "unless they are promptly followed up by the operation of Laryngotomy." The importance of operating early is very strongly insisted upon by Mr. Lawrence; and the success of the practice illustrated by a case detailed at page 250 of the volume which contains his Communication.

cation. Its issue is generally fatal. The powers of medicine appear to avail little against it. The only remedy by which the life of the patient can be preserved, is Tracheotomy; and this should be had recourse to as soon as the signs of impending strangulation have decidedly shewn themselves.

The disease, called *Laryngeal Phthisis*, is ulceration of the membrane, the natural consequence of chronic inflammation neglected or inefficiently treated. It often occurs in spirit-drinkers, who keep late hours, and are consequently exposed to wet and cold in returning from their midnight orgies. Atmospheric vicissitudes constitute its principal *exciting* cause. It is probably kept up and *aggravated* by the frequent passage of alcoholic stimulants over the morbid membrane in the vicinity of the glottis. Loss of voice with cough, purulent expectoration and hectic fever, is its invariable attendant. By the hoarseness, and the pain constantly referred to the Larynx, it may be *distinguished* from bronchial and pulmonary consumption, with which, especially the former, it exhibits in other respects, a close affinity; and is, in fact, sometimes complicated. Disease of the liver with dropsy forms one of its yet more ordinary complications.*

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* A middle-aged tradesman, who, by late hours and intemperance, had made deep inroads on a naturally vigorous constitution, exhibited the following symptoms: Hoarse cough with semi-purulent expectoration; loss of voice; rapid pulse; emaciation; enlarged liver, with obscure sense of fluctuation in the belly; swollen ankles, and slightly jaundiced countenance. He complained of pain in the throat,

Even in its simple character, laryngeal ulceration is a dangerous and unmanageable affection. Assuming, as it sometimes does, a malignant character with enlargement and induration of the neighbouring glands, it is then perfectly incurable.*

An affection occasionally occurs in sensitive and hysterical females; which so closely simulates the aspect of acute Laryngitis, that the profound and experienced observer will alone be able to establish a diagnosis, with confidence, between them. It differs principally from the genuine disease in recurring by paroxysms which mental agitation, or indigestible food will at any time excite; in its protracted duration and rarely fatal issue; —and in the plan of treatment which it will require. General blood-letting, for instance, will mitigate or subdue the paroxysm when induced;

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difficult deglutition, breathlessness on motion, and debility. The fauces were unusually red and relaxed; the larynx sore on pressure. Inhalation of the vapours of Resin; mercurial inunction of the abdomen, Sarsaparilla with alterative doses of mercury, and diuretics; and mild nutritious diet, were prescribed. Under this plan, the health was re-established with surprizing rapidity; but, in consequence of the incurable thickening of laryngeal membrane, the patient continued to articulate, when the writer last saw him, in a hoarse whisper.

* An elderly gentleman, long addicted to drinking, had complained, for some time, of soreness of the throat and difficulty of swallowing. An absorbent gland on the left side of the windpipe began to swell, and attained a considerable volume. At length, respiration became alarmingly disturbed; and, under these circumstances, the writer first saw him. The voice was hoarse; the breath offensive; respiration executed slowly, and with a peculiarly low stridulous sound. There were occasional paroxysms of suffocative cough, with expectoration of a pus-like fluid in a large quantity of mucus; weak and hurried pulse; emaciation; and an anxious and desponding countenance. The fauces were red and swollen. The breathing and expectoration became daily more difficult: and, on the fifth morning, death took place, from suffocation. Leave to inspect the body could not be obtained.

but is usually impolitic, as rendering the system more susceptible to a relapse. The treatment, really indicated, consists in allaying uterine irritation, and removing that state of cerebro-spinal congestion; which, resulting from such irritation, appears to determine the convulsive action of the larynx. The instruments best fitted to accomplish these objects are, the Hip-bath, applications of Leeches to the groins and hind-head, antimonial Purgatives, and spinal Blisters. Ammonia, preparations of Iron or Cinchona, Animal Diet, Exercise, and the Shower-bath, will most effectually fortify the system against a recurrence of the distressing affection.

The phenomena of *Tracheitis, Cynanche Trachealis*, or *Croup*,* are too familiarly known, to require description. No one who has once heard the portentous sound of the respiration in this terrible disease, can ever mistake or fail to recognise it. Children are, for the most part, its subjects: damp and atmospheric vicissitudes, its principal exciting causes. Neglected or unsuccessfully opposed, it commonly terminates by effusion of lymph upon the membrane of the respiratory tube, and suffocation. It is sometimes the consequence of an extension of the inflammatory action from the membrane of the bronchia to that of the wind-

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* It is called also, *Angina trachealis;* and by the continental writers, *A. membranacea*, from the layer of coagulable lymph; which, membrane-like, is thrown out in simple Croup, on the internal surface of the windpipe.

pipe in Measles and Hooping-cough,* when aggravated by improper treatment or exposure. Not unfrequently, on the other hand, the inflammation extends from its original seat in the windpipe, upwards to the Larynx, or downwards to the Bronchia: and, thus, Croup may become complicated, in its progress, with laryngeal or bronchial inflammation. The latter complication most frequently occurs; or, at least, the signs which indicate its existence, are most distinctly marked† in character.

Emetics, Blood-letting, Blistering of the throat and Calomel, constitute the remedies which are principally to be relied on in the *Treatment* of Croup. The success of it will, in general, be determined by the early administration, and bold and vigorous prosecution, of these means. Yet there are some cases of Croup against which no common vigilance or activity prevail. They pursue, from the onset of the disease, a course which these remedies, in their ordinary mode of application, will neither mitigate nor arrest; and proceed with an overwhelming rapidity to their fatal

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* See *Medico-Chirurgical Journal*, Vol. III, p. 458; and p. 178 of the present Work.

† A case, strikingly illustrative of this complication, is given by Dr. Farre, *Medico-Chirurgical Transactions*, Vol. III, p. 336. It is not difficult, in his opinion, to discriminate, during life, between simple Croup, and the disease when complicated with Bronchitis. In the *former*, "the difficulty of breathing is evidently that of impending strangulation;" in the *latter*, "that of deep-seated and extensive oppression." The dissimilarity exhibited by the two varieties, after death, will be clearly seen on a reference to the "Case of Cynanche Trachealis," detailed by Dr. Farre at p. 331; and to that cited at the commencement of the present note.

issue. If such cases be narrowly observed, signs, indicative of cerebral congestion, will be, from the first, apparent: and a variation of treatment, governed by a regard to such state, will become necessary. In this complication of croup with cerebral fulness, emetics and the warm bath will usually be injurious: and Opium, employed with advantage in simple Croup, is wholly inadmissible here. When loss of blood from the system is indicated by the violence of the symptoms, the temporal artery or external jugular vein should be opened.* In less severe cases, blood should be taken, by leeching, from the temples or occiput

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* See a case (*Medico-Chirurgical Journal*, Vol. III, p. 462.) in which the fatal issue of Croup was evidently averted by large bleeding from the jugular vein. The subject was a stout boy, aged 4. Respiration was dreadfully embarrassed; eyes watery and dull; lips and ears almost purple; cheeks livid; superficial veins of head and neck excessively loaded; carotid arteries throbbing with great force; pulse at the wrist small, feeble, rapid; extremities cold. These probably constitute the principal exterior signs by which Croup in its complication with cerebral congestion, may be distinguished from the simple variety. With respect to the morbid appearances, Dr. Sanders asserts "that in all those who have died of Croup, whether of the species called inflammatory or the spasmodic, effusion more or less is always found in the cerebellic cavity, and at the top of the spine, as well as turgescence of the veins surrounding the medulla oblongata, and the nerves thence arising; and, for the most part, the greater the serous effusion, the less conspicuous is the turgescence. This turgid state of the vessels often involves the whole base of the brain, and extends down the cervical part of the spinal marrow." See a Communication "on disorders of the Nervous System," *Medico-Chirurgical Journal*, Vol. V, p. 8. That this is a correct description of the state of the brain in the variety of Croup now under review, there can exist no doubt. Dr. Sanders, however, probably errs in the indiscriminate application of it to the other two varieties. In the case of simple Croup, recorded by Dr. Farre, the contents of the "head" are declared to have been found in "the most perfect state;" and the correctness of this evidence is supported both by the reading and observation of the present author.

rather than from the throat: and spinal irritants should, under all circumstances, be substituted for blistering of the region of the windpipe or the chest. The most gratifying success will frequently be the result of this deviation from the ordinary practice; and demonstrate the accuracy of the views by which it has been suggested. Death, in such cases, takes place by stupor or convulsion, and not by mere suffocation as in the simple variety of Croup and in its complication with Bronchitis: and, on dissection, will be discovered congestion and serous effusion in the base of the brain, and about the summit of the spinal marrow, with little or no exudation of lymph on the membrane of the windpipe. This complication of Croup with cerebral congestion is most commonly observed in large-headed and intelligent children.

When effusion of lymph has occurred within the windpipe, in *Simple* Croup, suffocation may generally be averted by the operation of Tracheotomy alone.* Yet here the chances of success are obviously less encouraging than in Laryngitis: because, if, as sometimes happens, the inferior part of the tube be plugged up with false membrane or other morbid secretion, the object of the operation will be defeated.†

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* See two cases of the successful performance of Tracheotomy, in Croup, *Medico-Chirurgical Transactions*, Vol. III, p. 335; and Vol. VI, p. 15. The former is extracted from an elegantly-written Inaugural Dissertation, in Latin, published by Dr. Thomas White, at Leyden, in 1786; the latter is recorded by Mr. Chevalier. Tracheotomy is obviously preferable to Laryngotomy in Croup.

† In a fatal case examined by the writer (*Medico-Chirurgical Journal*, Vol. III, p. 464) which, from the history given by the mother, apparently exhibited the

In the Complications of Croup with cerebral congestion and with Bronchitis, Tracheotomy should never be practised: the windpipe, in the former, offers no obstruction to the passage of the air: and, in the latter, the exudation of lymph in the bronchial tubes will render the enterprize abortive. By a singular laxity of expression, the term, *Bronchotomy*, has been introduced, and is still retained in the language of medicine. Yet to all who are acquainted with the anatomical divisions of the respiratory tube, and their relative situations, it is evident that no such operation as Bronchotomy can actually be performed.*

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characters of simple croup, the windpipe was found plugged, not with adherent membrane, but with a substance resembling pale and semi-fluid honey; which extended even within the primary ramifications of the tube. Under these circumstances, Tracheotomy would have been unavailing.

* In addition to the Papers already quoted on *Laryngitis*, see an interesting case by Dr. Percival, in which Laryngotomy was unsuccessfully performed; *Medico-Chirurgical Transactions*, Vol. IV, p. 297;—and some valuable "Remarks" on a preceding case, by Sir Gilbert Blane, *Same Work*, Vol. VI, p. 141. The following is a catalogue of the best Monographs with which the writer has any acquaintance on the subject of *Croup:* Home, *Inquiry into the Nature, Cause, and Cure of the Croup*, 8vo. Edinburgh, 1765;—Murray, *Abhandlung von einer boesartigen Broeune, und einer widernaturlichen Haut in der Luftrohre*, 8vo. Goettingen, 1769;—Cheyne, *Pathology of the Membrane of the Larynx and Bronchia*, 8vo. Edinburgh, 1809; Royer-Collard, *Rapport addressé a S. Exc. le Ministre de l'interieur, &c. sur les ouvrages envoyés au concours sur le Croup.*—This contains the substance of the Prize-Essays by Jurine and Albers, of which an excellent account is given by Mr. Williams, in the 10th Vol. of the *New Medical and Physical Journal;*—and Desruelles, *Traitè théorique et pratique du Croup*, 8vo. Paris, 1824. Valuable observations on the same subject, may be seen in the *Lettere mediche*, of Martino Ghisi, Cremona, 1749:—in a *Treatise on Malignant Angina*, by Johnstone, Worcester, 1749;—a *Treatise on the Management of Female Complaints*, by Hamilton, Edinburgh, 1809;—*Principles of Midwifery*, by J. Burns, London, 1811;—and in the *Dictionaire des Sciences Médicales*, Tom. VII, Article, *Croup.*

For the first correct description of *Bronchitis*, as a distinct disease, the profession is indebted to Dr. Badham.* Previously to the appearance of his classical work, acute bronchial affections had been confounded with inflammation of the substance of the lung itself or its external covering. Dr. Hastings, of Worcester, has since farther illustrated the subject by his more voluminous and elaborate production.† Evident traces of the characters of Bronchitis may be descried in the writings of several of the older pathologists. Acute Asthma is, perhaps, one of the most significant appellations among the many by which the two first species of this newly-constituted genus of diseases have, in past times, been disguised.‡

Bronchitis consists in an inflammatory state of the

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* Now Professor of Medicine in the University of Glasgow. See his *Observations on the Inflammatory Affections of the Mucous Membrane of the Bronchiæ*, London, 12mo. 1808. This little work has attracted great attention both in Britain and on the Continent. Dr. Badham divides the Genus, Bronchitis, into three species, the Acute, Asthenic, and Chronic. For the term, *Asthenic*, objectionable as applied to a disease of inflammatory character, the liberty is here taken of substituting the more correct epithet, *Sub-acute*. The second species of Bronchitis, attacking the young and vigorous, exhibits, in fact, few of those signs of *Asthenia*, by which it is characterized in the aged or infirm.

† See his ably-written *Treatise on Inflammation of the Mucous Membrane of the Lungs*, London, 8vo. 1820. Seven varieties of Acute, and six of Chronic Bronchitis are distinguished by Dr. Hastings. The Sub-acute Species constitutes, in his arrangement, the second variety of the Acute. The work exhibits many valuable facts, and clear and comprehensive views in pathology; and is far less generally known than it deserves.

‡ It is the *Suffocative Catarrh* of some writers. Copious and learned Reviews of the opinions of their predecessors, respecting Bronchial Inflammation, may be seen in the works of Drs. Badham and Hastings.

mucous lining of the bronchial tubes. It may assume an acute, a sub-acute, or a chronic form.

Acute Bronchitis may be either original, or consecutive; simple, or complicated with inflammation of other portions of the same continuous membrane, or with congestive or acute affections of the lung or of a remote organ. It may be *distinguished* from inflammation of the lungs, Pneumonitis,* and from that of their external membrane, Pleuritis, by the wheezing sound of the respiration; and by the sudden loss of strength, and copious expectoration, which are observed when the second stage of the disease,—that of mucous effusion,—has taken place.† It *terminates* either in profuse discharge of mucus by coughing; — in suffocation where this inordinate secretion can no longer be expectorated;—in exhaustion produced or accelerated by the obstacle which the morbid state of the respiratory membrane opposes to the due arterialization of the venous blood;—or in chronic inflammation, with thickening or ulceration, of that membrane. It is generally *excited* by exposure to cold, damp, and sudden variations of temperature. It con-

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* From the Greek noun, signifying *Lung*. In more strict accordance than *Pneumonia*, with the composition of the terms which are used to denote inflammation of the other portions of the respiratory membrane. The author is not aware that it has been employed by any preceding writer.

† For the peculiar signs and characters which distinguish Inflammation of the lung and pleura from Bronchitis, see the succeeding sketch of these diseases, or the more luminous and minute diagnosis of Dr. Badham, and Dr. Hastings, at p. 86, and 195, of their respective Works. There is a short Chapter on "Peripneumonia Notha," in Dr. Cheyne's Work, before cited.

stitutes, when existing in a mild shape or limited extent, or resulting from the operation of a peculiar cause, the essential character of Catarrh, and of Hooping-Cough. In a more active and extended form, it may be consecutive on the latter affection; on Measles, and other eruptive diseases.* It is sometimes complicated with Croup, or with a congestive, or even inflammatory condition of the Brain, the Heart, the Stomach, or the Liver.†

Sub-acute Bronchitis is *excited* by the same causes as the preceding species. It may be *distinguished* by the more gradual and insidious nature of its approach, and the mitigated character of the inflammatory signs which it exhibits. It forms, in *aged subjects*, the Spurious Peripneumony of writers. The temperature of the body, in this variety of Bronchitis, frequently does not exceed the natural standard; and the pulse is slightly, if at all, accelerated. It is often *complicated* with affections of the Brain; more commonly with

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* See Dr. Hastings' description of the fifth variety of Acute Bronchitis. *Treatise*, p. 170; and Mr. Alcock's valuable "Observations" before cited. *Medical Intelligencer*, Numbers for May and June 1820.

† During the past winter and early spring, Bronchitis has been unusually prevalent in the midland counties: and the attack, whether assuming the acute or sub-acute form, was very generally complicated with an affection of the liver. Tension, with soreness or pungent pain of the right side, absence of bile from the fæces, and high colour of the urine, constituted the more prominent signs of this complication. From the few cases which he has yet seen of the disease termed *Pneumonia typhodes*, the writer is inclined to regard it as acute Bronchitis or Pneumonitis, complicated with an extraordinary degree of congestion, or with inflammation of the membranes, of the brain.

derangement of the Stomach and Liver.* Its fatal *issue* is usually determined by suffocation or exhaustion.—Attacking the *young or vigorous*, it puts on the aspect of obstinate catarrh, and too often experiences inert treatment or neglect. A morbid state of the bronchial membrane, attended with pulmonary hemorrhage and terminating in purulent expectoration, is the frequent consequence of this fatal apathy or error. It then assumes the name of Bronchial or Catarrhal Phthisis. Scrofulous or otherwise diseased subjects, suffering from a severe or neglected attack, ordinarily become consumptive, even under the most active and judicious management.

Chronic Bronchitis includes all the varieties of chronic cough, accompanied with copious expectoration; which the climate of these islands is known to entail, particularly on their more aged inhabitants. It, in most instances, *results* from re-iterated or imperfectly-

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* The characters of Peripneumonia Notha,—the variety of Sub-acute Bronchitis, peculiar to the aged,—in its simple form, are clearly exhibited in the following sketch taken a few days since, at the bedside of the Patient, on the seventh day from the attack: Subject, aged 60; had repeatedly suffered from catarrhal affections. Respiration much oppressed and wheezing; cough troublesome; expectoration thick, heavy, greenish-yellow, copious; and accompanied with signs of suffocation. The semi-erect posture most comfortable. No pain in the chest, nor difficulty in reclination on either side. Face and legs slightly œdematous. Skin cool; pulse feeble, 78; no thirst. Tongue white and loaded, with a streak of the natural colour down the middle. Intestinal discharges small and variously coloured. Urine scanty and turbid. Pain across the forehead, and slight confusion of intellect on awakening from transient sleep. *Treatment:* Calomel; Blistering; with Acetate, and subsequently Sub-carbonate, of Ammonia. Diet, Beef-tea. Soon convalescent.

subdued attacks of acute or sub-acute inflammation. Sometimes, it *terminates* in an incurably-morbid condition or ulceration of the bronchial membrane, with purulent expectoration, wasting and hectic fever;—more frequently, by inducing congestion of the lungs, heart, or liver, in effusion of serum into the cellular structure of the pulmonary organ, the cavities of the pleura, of the pericardium, or the abdomen, and general dropsy.

The *Treatment* of Acute Bronchitis consists in Blood-letting from the arm or jugular vein;—in the prescription of a large Blister* to the chest, of Antimony, Digitalis, Calomel combined with Opium, saline purgatives; abstinence, and confinement to a warm temperature, during the *inflammatory stage*. Repeated use of the lancet will not, in general, be requisite, nor even borne with impunity, as in Pulmonary Inflammation: nor is the employment of leeches or the cupping glass needful except where the disease is complicated with evident disorder of the brain or liver.†

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* Whenever for the removal of any acute affection of the brain, lungs, or bowels, blistering is indicated, it should be very largely prescribed. The efficacy of this valuable remedy will generally be proportioned to the extent of surface over which it is applied. Small blisters only irritate without relieving the patient in inflammatory diseases. On this subject, the opinions of the writer precisely coincide with those of Sir Gilbert Blane. See *Medico-Chirurgical Transactions*, Vol. VI. p. 146: hence he promulgates them with the greater confidence. Blistering, however, will not be found so promptly and conspicuously beneficial in bronchial or pulmonary, as in pleuritic inflammation.

† A baker, aged 36, who had lost two brothers in tubercular Consumption, was seized, during the early spring, with acute Bronchitis. Its complication with derangement of the liver, at that period unusually prevalent, was very clearly marked. The cough was distressing; expectoration abundant; voice hoarse; dejec-

In this case, blood may be drawn with advantage from the back of the neck, or the lower margin of the right ribs, and a blister be applied to one or other of these regions.—When *exudation* has taken place, that state of membrane which has determined, and will continue, the process, may be removed by a prolonged employment of Calomel and Blisters; expectoration be aided, and the system supported in the struggle, by the prescription of Seneka, Asafœtida, Camphor, Ammonia, light Tonics, and gelatinous Diet with or without the addition of alcoholic Stimulants. To cases of obstructed Bronchia, Tracheotomy is obviously inapplicable.

In the *Sub-acute Bronchitis* of *aged* persons, General Blood-letting is seldom necessary. Sometimes it will produce irreparable failure of the vital powers. When the symptoms of the first stage run unusually high, abstraction of blood from the arm or chest may, however, be correctly indicated. It will be more advantageously taken from the neck or head, if the brain sympathize with the bronchial affection;—from the region of the liver, when signs, indicating derangement of that organ, are exhibited. This should be followed by the application of a blister to the whole

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tion of white feces frequent; urine high-coloured; complexion sallow. *Treatment:* Leeching, blistering, abstinence, warm air: Oxymuriate of Quicksilver with Foxglove thrice a day; Quicksilver with chalk, Opium and Ipecacuanha, at bedtime. The patient, under this plan, recovered rapidly: and although imprudently undertaking a journey to the north, on horse-back, in one of the coldest days of March, immediately on liberation from his confinement, exhibited, at his return, no vestige of the disease.

front of the chest, if the disease assume its simple form; and of another between the shoulder-blades or to the right side, in its cerebral or hepatic complications. An emetic or purgative or both may also be beneficially administered in the *early stage* of the disease, when the stomach is much deranged or the bowels loaded. The other remedies, applicable to this period, are, Acetate of Ammonia, Nitrate of Potash, Ipecacuanha, with Calomel twice a day; Diet of weak broth, and a mild unvarying Temperature.—The dangers and exhaustion of the *second period*,—that of effusion,—will be best averted or removed by irritating applications to the chest and ancles; the large administration of Ammonia, and the other stimulants enumerated in the preceding paragraph; and nutritious diet with a cautiously regulated proportion of wine or brandy. To clear the bronchial tubes from the accumulation of effused mucus, and thus relieve the patient from the signs of impending suffocation with which he is sometimes menaced in the second stage of sub-acute Bronchitis, emetics have been recommended. But when the powers of the system are much sunk, or the brain is evidently oppressed, the employment of such a remedy might not be void of danger. Under circumstances of extreme exhaustion, stimulants may be successfully administered with a bold hand.*—The Sub-acute Bronchitis, of

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* An aged miller was left, at night, apparently dying in a most severe attack of Sub-acute Bronchitis. The face was purple; the pulse extinct; expectoration

young or vigorous persons, can only be subdued by repeated Blood-letting general and topical, counter-irritants, abstinence, and respiration of warm air. To the most judicious and energetic treatment it sometimes opposes, especially when neglected, or aggravated at its origin by stimulant remedies, an obstinate resistance.* For the reduction of those catarrhal symptoms, which, in subjects predisposed to the formation of tubercles, are the frequent precursors of pulmonary consumption, a similar plan, less rigorous however, and modified by a regard to the delicacy of constitution which such patients notoriously exhibit, will, in general, be required.

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suppressed; the extremities cold. With the view of making a last effort, Blisters were applied to the internal ancles, and Ammonia, and Brandy, directed to be given, at short intervals, alternately during the night. Next morning, the patient's system had rallied from its deep depression. He eventually recovered. But the blistered surfaces each degenerated into a painful sore which never could be healed without inducing a recurrence of the cough and difficulty of respiration. Some years subsequently, he died of dropsy. Other instances, almost equally striking, of the effect of stimulants in the perilous exhaustion of Bronchitis have occurred in the writer's practice.

* A healthy young man, of most active habits, became ill, in 1821, from "taking repeated colds." When the disease had existed for some time, signs of languor and debility were observed. To repair these, tonics and stimulant food were prescribed and urged upon him, until his stomach recoiled from them, or soon rejected them in the severe paroxysms of coughing which they never failed to excite and aggravate. The expectoration was mucous with an admixture of starch-like masses, now and then slightly streaked with blood. There was no pain in the chest or side: reclination equally practicable in any posture; breathing hurried on exertion. The skin was harsh and dry; every hair that rose from it, stood erect: pulse ranging about 90, small and wiry. Emaciation had commenced. A rigorous system of abstinence and confinement; blood-letting to the amount of eight ounces every fifth or sixth day; sedative and aperient medicines, were, under these untoward circumstances, prescribed by the writer, and steadily pursued for more

Chronic Bronchitis may be most successfully treated by Tonics, external Irritants, Diuretics, nutritious Diet, invigorating Exercise, and Respiration of a dry and genial atmosphere. Of the efficacy of the Copaiba Balsam, recommended by a physician* of great authority, in this disease, the writer has no experience. Any sympathetic affection of the brain or digestive organs which may be complicated with, and re-act upon, the morbid state of the bronchial membrane, it will be obviously requisite to correct.

In *Bronchial Phthisis* consequent on any of the preceding diseases, Tonics, Counter-irritants, mild nutritious Diet, confinement to an artificial Temperature, or Migration to a more genial climate, are principally to be relied on. To these cases the inhalation of Resinous Vapours† is peculiarly, if not exclusive-

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than twenty weeks, before the disease completely yielded. Swelling of the ancles, the only relic of his complaint at this period, shortly gave way to exercise and nutritious diet: and the patient has since enjoyed, without interruption, the most robust health.

* See Dr. Armstrong's *Practical Illustrations of Scarlet Fever, of Measles, of Pulmonary Consumption, &c.* 8vo. London, 1818. From the effect produced by the Balsam of Copaiba in removing the irritations of the other mucous membranes, its salutary operation in Bronchitis may be fairly inferred. The Peruvian Balsam is a remedy upon which, from experience of its powers, the writer would be disposed to place still greater reliance.

† The Cases of Phthisis reported to have been cured by inhalation of Tar or Resin vapours, would, if correctly observed, have been found to consist in chronic thickening or ulceration of the membrane of the larynx or bronchia. In such instances, the remedy is valuable, as possessing the advantage of direct application to the diseased parts. But Tar vapours will not arrest, even temporarily, the progress of tubercular consumption. This, the writer is enabled from experience, as

ly, applicable. When the bronchial disease is complicated with tubercular formations in the lungs, with other morbid condition of the pulmonary organ, or with indications of a scrofulous habit elsewhere existing, the case is well-nigh desperate.

At the close of the acute and sub-acute species of Bronchitis, and sometimes from the commencement of the latter in aged or infirm persons, a *Dropsical Swelling* of the lower limbs is observed. In these cases, it results either from the obstruction encountered by the blood in its passage through the lungs; from the imperfect execution of the vivifying process to which that fluid is subjected in respiration; or from the debility consequent on the existence and treatment of all active diseases. It will yield to diuretic combined with tonic medicines. In Chronic Bronchitis of long duration, a similar morbid appearance is sometimes manifested; and may be ascribed to the first of the preceding causes. When the bronchial affection is complicated with, or has induced, structural disease of the heart or enlargement of the liver, it commonly terminates by effusion of serum into the cavities of the chest or abdomen with general dropsy; which is very often incurable.* The dropsical effu-

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painful as extended, to assert; and thus contribute, by his evidence, to dispel the fair illusion, which the *Account of some Experiments*, By Dr. Crichton, 8vo. Edinburgh, 1818, is but too well calculated to inspire.

† See the Fifth Chapter of Dr. Hastings' *Treatise*. In discussing the subject of Dropsy, consequent on organic lesions of the Heart, the writer will have occasion to revert to the contents of this interesting Chapter.

sion which ensues in one variety of Bronchitis, connected with violent agitation of the arterial system, and congestion of the liver, will sometimes yield to copious and repeated blood-letting, mercurial purgatives, and abstinence.*

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* In 1812, a publican of most intemperate habits, aged 32, and originally robust, left his home in a neighbouring town, to die at Tamworth. His legs, thighs, and abdomen were enormously distended with serum; his skin jaundiced. He had a hard suffocative cough, recurring by fits, and followed by expectoration of mucus occasionally streaked with blood; sometimes by vomiting. His respiration was so oppressed that he could not cross a narrow street without pausing twice or thrice to take breath: pulse hard, full, throbbing, about 94; stroke of the heart visible at a considerable distance and imparting an impulse to the curtains of the bed on which he generally reposed. Region of the liver sore on pressure; feces small and nearly white; urine scanty and of a deep brandy colour. Tongue bright-red; thirst excessive; and stomach so irritable that food, whether solid or fluid, was almost instantly rejected. *Treatment*: Blood-letting to the amount of thirty ounces; six grains of Calomel at night; and Sulphate of Magnesia thrice a day: abstinence from all solid food and alcoholic stimulants. So unexpectedly decisive was the relief afforded by the first blood-letting and Calomel-dose, that they were repeated, to the same amount, every day for five successive days. By that time, the dropsical swelling, cough, breathlessness, and jaundice had disappeared; the feces become natural; the urine abundant; the arterial system tranquil; and the stomach could take and retain two pounds of new milk and one of toasted bread a day. The bowels were now merely regulated by Sulphate of Magnesia; and the patient, in a fortnight, returned home, "a new man." For two years, he remained quite well; but, resuming his baneful habits, was then suddenly destroyed by some affection of the heart or brain, ere the writer could be summoned. Respecting the weight of the blood drawn in this case, no error has been committed: the capacity of the basin receiving it, was accurately determined. The blood taken on the first morning and on the fifth, presented a natural appearance; that, on the three intervening days, was excessively buffy. Nothing but the relief experienced by the patient in his respiration, and the evident diminution of the dropsical swelling under it, could have justified this daring practice. After the first blood-letting, he could lie down without a recurrence of the dread of suffocation: and felt himself stronger at the close of the treatment, than at the commencement. There are other varieties of dropsy against which blood-letting constitutes the principal remedy. The author, however, differs with Dr. Hastings, from the opinion of Dr. Blackall that

Inflammation of the substance of the Lungs, *Pneumonitis*,* is ordinarily *excited* by exposure to atmospheric vicissitudes; or by application of cold water to the surface, or ingestion of cold fluids, during a heated condition of the body. It may assume either an acute or chronic character; be simple, or complicated with acute or congestive affections of the contiguous membranes or of remotely-situated organs.

Acute Pneumonitis rarely exhibits a *simple* form. *Complicated* with an affection of the brain, it constitutes a variety of the *Typhoid Pneumonia*, of writers; is attended by great prostration of the vital powers; and generally proves fatal:—with Bronchitis, it forms a disease of which no accurate description exists in medical writings, and to which no distinctive appellation has been assigned:—with Pleuritis, it acquires the title of *Pleuro-pneumony:*—with derangement of the Stomach and Liver, that of *Bilious Pneumonia*.† It may *terminate* favourably, by expectoration; dan-

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the propriety of the practice may be clearly determined by coagulation of the urine on the application of heat. See Dr. Blackall's *Observations on the Nature and Cure of Dropsies*, 8vo. London, 1818.

* The Pneumonia and Peripneumonia, of preceding writers.

† The author has seen two cases, in which the whole structure of the lungs and their investing membranes, the liver, and intervening diaphragm appeared to be involved in general inflammation. Breathing, in these instances, was performed with a peculiar convulsive effort: and the countenance wore such an expression of anxiety and alarm as is never exhibited in simple pulmonary inflammation, however severe. Large and repeated blood-letting procured no sensible mitigation of the intense suffering; and the patients were hurried with fearful rapidity to the grave.

gerously or fatally, by effusion of serum into the structure of the organ,—*Dropsy of the Lungs;*—by Condensation;—by Suppuration, inducing either the *Apostematous Consumption*, of some authors, or *Empyema;*—or by Gangrene of the Lungs,—a very rare occurrence. Inflammation attacking any portion of tuberculated lung, may also determine or accelerate the process of suppuration; and thus give rise to incurable tubercular Phthisis.

Chronic Pneumonitis is referrible to the same *causes* as the preceding species. It is sometimes the consequence of an attack of acute inflammation imperfectly subdued. More frequently than that, it exhibits a simple character: its *Complications* are less numerous and distinctly marked. Like the former, it may *terminate* in Dropsy, or Œdema, of the Lungs; in Hepatization; in Abscess; or in Gangrene.*

The *Treatment* of *Acute Simple* Pneumonitis consists in the prompt and vigorous adoption of such mea-

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* A young delicate-looking man had, for some months been labouring under chronic pulmonary disease, when he applied to the writer. His prominent symptoms then were hurried breathing and circulation; dry irritative cough; progressive emaciation; and considerable swelling of the ancles, the skin of which was slightly inflamed, glistening, and covered with an eruption strongly resembling in character, simple Purpura. Medicine was unavailing. After a long struggle the man died somewhat suddenly. On dissection, both lungs were completely gangrenous, on their exterior; dense and gorged with blood interiorly. Nearly a pint of reddish serum was poured out into the right cavity of the chest; and two, into the left. The liver, spleen, and mesenteric glands were enlarged; the former mottled in its whole structure: a portion of the jejunum slightly inflamed: the other organs sound.

sures as are calculated to lessen the impetus of the blood in the heart and pulmonary vessels; determine it to the surface and extremities of the body; and obviate or remove every source of irritation. General blood-letting, rigorous abstinence, immersion in a mild atmosphere, perfect silence and repose, and sedative medicines, will most effectually accomplish these indications. A Blood-letting practised at the onset of the disease, so largely as to induce fainting, and followed by a full dose of Opium, will frequently arrest its progress. But depletion, if improvidently repeated day after day, will check the salutary process of expectoration; and, without subduing the pulmonary disease, induce a state of exhaustion quite as perilous; from which nothing but a bold administration of stimulant remedies will rescue the sinking patient.* Local abstraction of blood, and blistering are not ordinarily indicated in simple cases. When counter-irritation becomes necessary, the irritating agent may be applied more beneficially to the extremities than to the chest. In *Complicated* Pneumonitis, the

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* In Inflammation of the lungs, either particularly violent, or inefficiently treated at its onset, the system may be exhausted by profuse and repeated blood-letting; and yet, no corresponding impression be made on the pulmonary disease. In this alarming state, respiration is dreadfully opprest; expectoration prevented or checked; the countenance sunken; the action of the heart fluttering; and extremities cold. Several such cases have been witnessed by the writer. And, in more than one instance, has the patient been rescued from an apparently desperate situation by the prompt but guarded exhibition of Opium, Ammonia, and Brandy; and by the application of Blisters or Mustard-poultices to the lower limbs.

practice will be modified by the character and severity of the peculiar complication.

The *Treatment* of *Chronic* Pulmonary Inflammation must be governed by the same general principles as the Acute. Remedies less active in proportion to the milder character of the disease, will, however, be required: and they are not commonly administered with equal success. From the insidious nature of the affection, the lungs will, in many cases, have sustained irreparable injury ere the signs indicating its existence, are clearly recognised. To the various *Morbid Consequences* resulting from either species of pulmonary inflammation, must be applied such Treatment as is precisely indicated by the nature of the morbid change. Thus, Dropsy of the Lung will require Stimulants and Diuretics; Abscess bursting into the bronchia, will be best, although seldom successfully, combatted by a mild pure atmosphere, milk or gelatinous diet, anodynes, and light tonics; Hepatization by counter-irritants; and Empyema by a surgical operation. Gangrene of the lung is absolutely incurable.

Pleuritis,* or *Pleurisy*, is the term employed to designate Inflammation of the Pleura, the serous membrane which invests the interior of the chest, and gives

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* The following slight parallel will suffice to expose the differences of external character existing between Pleuritic and Pulmonary, and to distinguish both from Bronchial, Inflammation. In *Pleurisy*, the *pain* in the side is acute, superficial, aggravated by percussion, reclination on the corresponding side, inspiration, and coughing: the *cough* usually dry: *pulse* hard and wiry: *expectoration* scanty and

to the lungs their external covering.* It is *induced* by the same causes as Pneumonitis; and, like it, distinguishable into an Acute and Chronic Species. It may also be simple, or complicated with congestive or inflammatory conditions of the adjacent or neighbouring structures.

Acute Pleuritis is seldom observed under its perfectly *simple* aspect. It is most frequently *complicated* with inflammation of the substance of the lung, of the membrane inclosing the heart, or with acute or congestive affections of the liver. It may *terminate* in resolution of the inflammatory process; adhesion; effusion of serum into the cavity of the chest,—Hydro-

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seldom streaked with blood.—In *Pneumonitis*, the *pain* is deep-seated and obtuse, with a sense of suffocation and oppression; *cough* moist; *pulse* generally soft; *expectoration* more copious and bloody. On application of the Stethoscope, the sound of *respiration* is not heard in *Pleurisy:* in *Pneumonitis*, it is very perceptible; but destitute of the peculiar *wheezing* which, with the *absence of pain*, characterizes *Bronchitis*.

* The Pleura, having lined the internal surface of the ribs, is reflected over the lungs. Hence the distinction into the costal and pulmonary portions of the membrane. The imaginary space between these two layers, is called the cavity of the pleura or chest,—the seat of the effused fluid in Hydrothorax. No such cavity, however, really exists: for, except when separated by extravasation of serum, blood, or pus, or by introduction of the external air, the costal and pulmonary pleuræ are in close and accurate contact. The lungs are merely passive organs in the respiratory process; and follow the boundaries of the chest in their alternate contractions and dilatations. The popular error of attributing shortness of breath to "adhesion of the lungs," is thus rendered manifest. Few persons arrive at adult age without exhibiting, on dissection, this morbid change. But the adhesion is rarely so intimate or extensive as to impede respiration. Very often it is effected by the interposition of membranous bands calculated little, if at all, to restrict the merely sliding motion which takes place between the opposed surfaces of the contained lung and its containing cavity.

thorax: or, when complicated with Pneumonitis, in Gangrene; in Empyema; or, by the intervention of the adhesive process, in formation of matter externally.*

Chronic Pleuritis is an obscure and insidious affection. It rarely exists in a state of simplicity; and is most frequently *complicated* with congestion, or hepatization, of the adjacent lung, or with derangement of the intestinal canal or liver. It commonly *terminates* in incurable thickening, or adhesion of the membrane, or Dropsy of the chest, ere the morbid phenomena which denote its existence, have been traced to their real source.

Topical depletion and blistering are particularly applicable to the *Treatment* of *Acute Pleurisy*. The intimate and almost direct connection which exists between the vessels of the pleura and the skin, sufficiently elucidates this practical truth. In more violent attacks of pleuritic inflammation, or in very robust or plethoric subjects, one general blood-letting may, however, be expedient; but profuse or repeated loss

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* When, in pulmonary inflammation, the signs of suppuration have been unequivocally manifested, and a fluctuating tumour indicates the progress of the contained matter towards the surface, the fluid should be evacuated with such precautions as will serve to exclude the atmospheric air and procure immediate re-union of the lips of the wound. The process, recommended by Mr. Abernethy for evacuating the contents of lumbar, are precisely applicable to the treatment of external pulmonary, abscess. An incurable fistulous sore, hectic fever, emaciation and lingering death, are the almost invariable consequences of its spontaneous rupture.

of the vital fluid will exhaust the system without producing any correspondent effect on the inflamed membrane.* Abstraction of blood by cupping or leeching, and the application of a large blister constitute, therefore, the essential treatment. Their success will be greatly promoted by abstinence, repose, and the use of such medicines as are calculated to restore and maintain the healthy condition of the skin and bowels. When the pleuritic attack is complicated with inflammation of the lung, pericardium, diaphragm, or liver, a more rigorous practice will be required; as repeated blood-letting with the active administration of Digitalis, Antimony, and Calomel. In the complication with derangement of the liver, termed *Bilious Pleurisy*, the two latter agents are especially indicated. Upon acute inflammation of the pleura, as of the lung, disturbance of the brain is more frequently consecutive, than co-existent with it.†

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* A middle-aged man, suffering, in 1815, from acute Pleurisy, had been four times largely bled from the arm, and very briskly purged, when the writer was called in. The system was then rapidly sinking, without any perceptible diminution of the local disease. The cold extremities were now enveloped in warm flannels; sixteen leeches, and subsequently a large blister, applied to the side; the bowels kept loose by small doses of Sulphate of Magnesia in mint-water; and the strength sustained by a regulated allowance of plain broth. At the close of the second day from the institution of this plan, every trace of the affection, except the debility consequent upon it, had disappeared.

† Several instances of supervention of cerebral affections upon inflammation of the lungs, have been observed by the writer. The two following are of recent occurrence. An active intelligent boy, aged 12, was largely bled, and purged, with great relief, in an attack of severe Pneumonitis. On the evening of the second day, he was suddenly seized, when apparently convalescent, with insensibility, convulsion of the limbs, and loss of speech. Four ounces of blood from

The practice, in such cases, must be regulated by the precise character and violence of the cerebral affection.

The *Treatment* of *Chronic Pleuritis* will be sufficiently illustrated by the preceding observations. Local blood-letting; counter-irritation, of which a large caustic-issue constitutes the most effectual form; abstinent diet, and muscular and mental repose, are the means principally to be depended on. A mild mercurial course may also be prescribed with advantage in obstinate cases; particularly if they exhibit the well-known signs of complication with derangement of the liver.

The Pericardium, or membranous bag containing the heart, bears the same relation to this organ, as the pleura to the lungs. It is distinguished into two portions,—the adherent and the loose. The former is closely connected with the surface of the heart, and constitutes its external covering. The latter, reflected from its basis, encloses the organ as in a sac; and is

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the arm; hair removed; cold applications to the head; warmth to the feet; ammonia internally. In five hours afterwards, the fit returned; and four ounces of blood were again abstracted. From that period, no recurrence of the pulmonic or cerebral symptoms.—A man, aged 30, sustained, from exposure to night-air, an attack of pulmonary inflammation with profuse hemorrhage. *Treatment:* repeated blood-letting, blistering, aperients, nitrate of potash, digitalis, abstinence, and confinement to a regulated temperature. The pulmonic affection had well-nigh subsided when all the signs of inflammation of the membranes of the brain were developed. Constant delirium with violent pulsation of the heart and carotid arteries, twitching of the tendons, parched and sooty condition of the tongue, sordes of the teeth, and involuntary evacuations, were in vain opposed by the usual remedies; and terminated, after a few days' struggle, in fatal stupor.

in contact with the diaphragm, the ribs, and pleura. Like the other membranes, it is subject to attacks of inflammation acute and chronic.

Acute Pericarditis is more frequently consequent on an extension of inflammatory action from the substance of the heart, or from the lungs and pleura, than observed as an original affection. When original, however, it may be *induced* by the application of cold; or follow the sudden recession of acute diseases from other parts of the system.* Instances of its occurrence from the infliction of external violence stand upon record. The characters indicating its existence, are very violent; its progress rapid; and issue commonly fatal. From its frequent complication with affections of other organs or membranes, its presence, in many instances, has not been clearly recognised until the period for effectual resistance was irrevocably past. The affections most commonly connected with it, are those of the heart itself, the lungs, diaphragm, and stomach. It may *terminate* in chronic inflammation with thickening of the pericardium; adhesion of the membrane to the heart;† exudation of co-

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* As the more acute eruptive diseases, and rheumatism, or gout.

† To an incorrect observation of this fact may probably be ascribed the different instances of reported deficiency of the pericardium. There are other morbid conditions of this membrane to which, as rarely occurring, it is not necessary to advert in a popular Essay. For a luminous description of them, the *Dictionaire des Sciences Médicales*, Tom. XL, Article, *Pericardite*, may be consulted. Other sources of valuable information on the subject will be indicated in discussing the diseases of the heart itself.

agulable lymph; and effusion of serum either simple or containing an admixture of blood or pus.—It will require the same general *Treatment* as acute inflammation of the other serous membranes. Yet as violent inflammation of the pericardium can never exist without implicating, in some degree, the structure, and deranging the functions, of the heart, general blood-letting should never be neglected; and may even be repeated with advantage in the early stage of of the affection: and the Foxglove, as exercising a powerfully sedative influence on the great organ of circulation, here presents itself as a valuable auxiliary. The success of all remedies must, however, depend, in this disease, upon their early, bold, and vigorous administration. The practice, in complicated cases, will be governed by a regard to the functions of the organ simultaneously affected. All the *Morbid Consequences* of Inflammation of the pericardium are, with the exception of serous effusion,* perfectly irremediable.

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* Dropsy of the Pericardium seldom exists unconnected with some morbid change in the structure of the heart or its investing membrane, or with effusion into the cavities of the pleura. This circumstance, in addition to the difficulty of accurately distinguishing it during life, constitutes a formidable objection to the project of evacuating the effused fluid by a surgical operation. Laennec has proposed to accomplish it by trephining the sternum. (*Auscultation médiate*, T. II, p. 375) When determined on, the operation will be more readily performed in the interspace of the ribs. It has more than once been successfully done. The prudent practitioner will probably make an attempt to procure absorption of the effused fluid by mercury, digitalis, squill, and counter-irritants, rather than stake his reputation on this daring and uncertain enterprize.

The Characters of *Chronic Pericarditis* are very obscurely marked. It rarely exists in a *simple* state: and hence, for the most part, lies involved in obscurity until the light of dissection is thrown upon it. The *Causes* and *Complications* of the disease; and its *Morbid Consequences* with few exceptions, are the same as those of Pericarditis in its more acute form. The practitioner who has the sagacity to detect its existence in the living subject, will be at not loss, in fixing the principles of its *Treatment*. By the less experienced, it may be inferred from the contents of the preceding paragraphs.*

Consumption, from a morbid state of the bronchial membrane, and from abscess of the lung has heretofore been cursorily noticed. They constitute the Bronchial and Apostematous species of the genus, Phthisis. The third, or Tubercular species, is next to be considered.

Volumes have already been written on this fearful scourge of the human race. Society presents, on ev-

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* The celebrated Mirabeau, whose name is so intimately connected with the history of the French revolution, died from Pericarditis complicated with inflammation of the diaphragm, stomach, duodenum, liver, and right kidney. An interesting "Journal of the illness and death" of this extraordinary man is given in a work entitled *Du Degré de Certitude de la Médecine*, 8vo. Paris, 1803, by his friend and physician, the philosophic Cabanis. "The pericardium contained a considerable quantity of thick, yellowish, opaque matter. Lymphatic exudations covered the whole external surface of the heart, with the exception of its apex. There was a little water in the cavity of the chest." Cases of acute and chronic pericarditis, with the results of dissection, may be found in the *Nosographie Philosophique*, of Pinel, Tom. II., and in the Article of the *French Dictionary*, just quoted.

ery side, examples of its prevalence and the traces of its devastation. Hence a brief outline of its character, causes and complications will alone be sketched here; with an exposure of some errors, professional as well as popular, which have long existed respecting its nature and treatment.

Tubercular Consumption is the result of a peculiar morbid change which *consists* in the formation of small indurated bodies, called tubercles, in the substance of the pulmonary organ. They sometimes remain, long after their development, in an indolent state; and undergo several changes in their progress to suppuration.* The summit of the lung is occupied by them more numerously than the base: the left lung, perhaps, more frequently than the right.† They sometimes pervade simultaneously the other structures of the body.‡ On the question whether these substances are organized, there has been much controversy; and it is yet undecided. They do not appear to be

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* Very clear descriptions of the pulmonary tubercle from its original state of "grey semi-transparent granulation" to the completion of the suppurative process, are given in the valuable Works of Laennec and Louis, presently to be noticed.

† This is attributed by the French physiologist, Bourdon, to the injurious habit which persons very commonly acquire, of invariably sleeping on the right side. Thus, "the left lung which, in most persons, acts twenty-four hours, while the right acts only sixteen, is also that in which tubercles are the most frequent, numerous, and advanced." See his little work *De l' Influence de la Pesanteur sur quelques Phénomènes de la Vie*, Paris, 1823. An analysis of a former impression is given in the *Medical Repository*, Vol. XIV, Page 60.

‡ In a young man who, in 1815, died of tubercular consumption attended, from the commencement, with symptoms of general dropsy, the writer found the surfaces of the heart, of all the abdominal viscera, and the intervening diaphragm,

the result of an inflammatory process. On suppuration, they form abscesses, or vomicæ, which burst, and discharge their contents, into the bronchia; frequently coalesce so as to form extensive cavities; and are rarely known to heal. Other tubercles successively suppurate until the healthy structure of the pulmonary organ is destroyed to an extent which renders it unfit for the sustenance of life. Cough with purulent expectoration and disordered breathing, hectic fever and emaciation, are the distinguishing *characters* of confirmed Phthisis in all its species.

Pulmonary consumption cannot be readily *confounded* with any other disease. Where the symptoms, just enumerated, unequivocally exist, there is Phthisis, whatever be its source, developed. The different species seldom admit, however, of correct discrimination except in their early period, or from a lucid history of their origin. In the suppurative stage, their distinguishing characters are obscured, or completely lost. Two species may sometimes even exist together. The *diagnosis*, however, is fortunately less important as it regards the treatment than the issue of the disease. Bronchial and Apostematous Phthisis have frequently, but the Tubercular seldom if ever, terminated in recovery.

Of the *Causes* which *predispose* the pulmonary organ to the formation of tubercles, little is known. They

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thickly studded with tubercular productions, circular, semi-transparent, slightly flattened, and precisely resembling in colour, white bees-wax.

are probably connected with some original peculiarity of constitution. All the depressing agents, moral and physical, signally favour the development of this morbid state: and exposure to damp, cold, and atmospheric vicissitudes, operates not only as a predisponent, but as the principal cause by which the dormant tubercle is *excited* into activity. Many of the warmer regions of the globe are well-nigh exempt from the ravages of consumption. In some unfortunately constituted beings, the disease seems to require for its development the application of no appreciable exciting cause. It is then the irresistible unfolding of a germ apparently mixed up with the very elements of existence.

The *Complications* of Tubercular Phthisis are numerous. It will suffice to notice here a few of the more common and strongly-marked. *Derangement of the stomach and bowels* is a frequent attendant on consumption, and sometimes assumes an aspect so prominent as to mask, or perfectly obscure, the pulmonary affection. This complication constitutes the *Dyspeptic Phthisis*,* of Dr. Philip: and both by this distinguished physician and Mr. Abernethy, the gastric is erroneously regarded as the cause of the pulmonary affection. More profound observation will shew that these morbid states are rather the co-existing effects of a general derangement of the system.

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† See his "Observations on a Species of Pulmonary Consumption very frequent in Great Britain." *Medico-Chirurgical Transactions*, Vol. VII, p. 490.

Nor does the disappearance of the pulmonary symptoms on the rectification of the digestive process, at all invalidate this position. An agent capable of remedying one consequence, will, in general, be found adequate to the removal of others which are known to result from the same cause. The beneficial influence of minute doses of blue pill upon this affection, is highly eulogized by Dr. Philip. Repeated experiment has induced many to prefer the Oxymuriate of Mercury in combination with Sarsaparilla or other alterative vegetable decoction.—*Intestinal Disease* is the almost invariable associate of Tubercular Phthisis; and constitutes, towards its close, a most painful and exhausting complication. In some instances, it is seen to precede the pulmonary affection;* and the symptoms of both conspicuously alternate throughout the struggle. On dissection, the mucous membrane of the bowels is found inflamed, thickened, and ulcerated; and the mesenteric glands frequently enlarged. This, like the preceding morbid state, may be considered as an effect common with, rather than the direct

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* Sometimes the affection of the bowels subsides on the development of the pulmonary symptoms, and does not recur, if at all, till the close of life. An interesting young lady, previously healthy, was seized with a bowel-complaint, for which no obvious cause could be assigned. It, at length, yielded to a judicious combination of dietetic with medicinal treatment: and was succeeded by disease of the lungs. On the writer's visit, a few weeks since, a large cavity, evidently of tubercular origin, was discovered, by the stethoscope, to exist in the summit of the left lung; and one, of more limited extent, in the right. All the symptoms of confirmed phthisis were present. Ten days previously to dissolution, the intestinal disorder had not re-appeared.

cause or consequence of, the tubercular formation in the lungs.—The complication of *Spinal Affections* with Phthisis has before been cursorily noticed.* In a few instances more recently observed by the writer, the spinal have preceded, by a considerable period, the development of the pulmonary symptoms; but he is yet without experience enabling him to decide upon the relation which the two affections bear to each other. They have invariably concurred in subjects whose physiognomy indicated the existence of the scrofulous diathesis; and may probably be considered as the co-existent effects of this morbid condition of the system.

Tubercular Consumption is commonly believed to be communicable from one person to another by Infection. Several individuals of a family have, indeed, sometimes successively, and within a short period, fallen victims to the disease. But this fact, which has been confidently adduced in proof of the infec-

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* See page 24. A delicate and intelligent girl, aged 20, exhibited all the signs of tubercular phthisis in the second stage: emaciation, accelerated pulse, hurried breathing, cough and expectoration of mucus occasionally streaked with blood. Pressure on the second and third dorsal vertebræ was intolerable; induced pain in the chest; and *invariably re-excited the cough.* A blister was applied between the shoulder-blades; repose, a light tonic, and mild nutritious diet, were prescribed: and, in a few weeks, the patient had recovered sufficiently to pay her physician a visit at a distance of twenty miles. Exposure to cold in returning, brought on severe inflammation of the hip-joint; which was, at length subdued by leeching, counter-irritants, and a combination of Oxymuriate of Mercury with Cinchona. Two years subsequently, neither the spinal or pulmonary affection had recurred. Of another precisely similar case, visited on the same day, and, treated in the same manner, the event is not known by the writer.

tious character of phthisis, must not be admitted as decisive of the question. A strong predisposition to phthisis frequently pervades all the members of a family. The first of these, in whom the slumbering spark is aroused into activity, dies after a struggle, perhaps of many months. Some relative of the deceased who has nursed him in his illness, and felt deeply interested in his fate, next droops and sinks like him. Hence it is inferred that the last event must have necessarily been the consequence of infection. But, in these calculations, it should not be overlooked that the second victim probably shared with the other, in a very conspicuous degree, the constitutioual peculiarities of his race; and that the predisposition to disease, which might otherwise have long lain dormant, was perhaps excited by the want of accustomed exercise, by nightly watching and exposure, by grief and anxiety;—in fact, by the united operation of all those physical and moral causes to which confinement in the sick room of a relative is calculated to give existence and energy; and which, by depressing the powers of the system, will explain the occurrence of phthisis without the agency of infection.* An atmosphere loaded with the noxious eman-

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* A stout, athletic, middle-aged gentleman, exhibiting no predisposition, hereditary or acquired, to pulmonary disease, was attacked with decided symptoms of *bronchial* phthisis, during a long and close attendance on his wife; who was suffering from *tubercular* consumption. Here was an instance which appeared very strikingly to illustrate the infectious nature of the disease. But might not the occurrence of the complaint, in this case, be more correctly ascribed to loss of

ations of ulcerated lungs, cannot be often respired with impunity even by robust persons: and it would be obviously impolitic to expose the young and delicate to a source of disease sufficiently teeming with danger, even when divested of an infectious character. The occurrence of tubercular consumption in a healthy subject, whose person and family have not previously exhibited any vestige of the disease, has never yet been conclusively traced to this cause.

Popular errors or fashionable extravagances in dress constitute the principal causes by which the pulmonary tubercle is excited from a state of indolence into activity. On the first indication of warm weather in this country, the inhabitants are wont to throw aside their winter-clothing and assume the lighter garb of summer. The variations of temperature at this season are frequently sudden and excessive: and the declension of the thermometer after sunset sometimes indicates a degree of cold little elevated above the freezing point. The influence of such vicissitudes on the unprotected system is most severely felt. Thousands of the delicate and diseased become annually its victims. In this instable climate, the alteration of dress on the approach of summer, should be

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the wonted exercise and rest, and the depressing influence of the circumstances of the patient's situation, than to infection? Ought not the wife's disease, if really infectious, to have excited a precisely similar affection of the pulmonary organs of the husband: in whom, however, the purely bronchial symptoms yielded rapidly and permanently to change of air, counter-irritants, and a spare unstimulating diet?

much less abrupt, and introduced at a later period, than it now is. The person, in fact, who makes but a trivial change in his artificial covering throughout the year, suffers less from extremes of heat and cold than those who vainly seek to regulate their apparel by the ever-varying seasons: while he escapes the dangers to which the thinly-clad are incessantly exposed from the sudden reduction of atmospheric temperature which frequently occurs in summer.

And even during winter, the younger females of this island are, in general, too scantily clothed. The effect of a sudden transition from the heated atmosphere of the theatre or the ball-room to the chilling air of midnight, on the delicate girl clad in the spare and flimsy costume of the fashionable world, may readily be conceived. Hence, it is the duty of those who have witnessed with anguish, to point out with earnestness and energy, the dangers, if they may not reprobate the indecorum, of this scantiness of covering; and to expose, if they cannot avert, the consequences,—by telling of the hours of hopeless suffering and regret,—which it too frequently entails. Could women be taught once clearly to comprehend the feelings with which honourable and reflecting men regard extravagant attempts at personal exhibition in the softer sex, the physician would no longer denounce, nor the philanthropist lament, in vain, the mournful sacrifice of female health or life to a style of decoration as impolitic as it is frigid; and scarcely less replete with peril to the moral than to the physical welfare.

Excess of clothing, in the weakly or infirm, constitutes an error more rare than its imprudent variations or defect; yet little less injurious. But there is still another prevalent and baneful habit to which, as intimately connected with the present subject, it is here requisite to advert. The confinement of the female chest by unyielding stays and other absurd contrivances for the supposed embellishment of "Creation's fairest work," must obviously obstruct the freedom of the respiratory process, and prevent the full and effective influence of the external air upon the pulmonary blood. Nothing will more certainly arouse into action any dormant predisposition to disease of the lungs than this unnatural system of constraint. And even where no such predisposition exists, a sense of listlessness and depression may result from imperfect renovation of the blood; which will disqualify the body for the requisite exertion of its physical powers; and thus augment, in a two-fold degree, its susceptibility to the impression of other diseases. A case has recently occurred in one of the French hospitals; wherein the summit of the right lung was driven upwards from the chest, and formed a tumour in the neck, of an infatuated votary of this ungraceful and most pernicious fashion*

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* See a case of "Hernia of the Lungs from tight stays," observed by M. Breschet at the Hotel-Dieu, *Medical Gazette*, May 16th, 1829. A knowledge of this curious fact cannot be too widely disseminated. It realizes, with a vengeance, and in a manner altogether unexpected, the popular notion of "Rising of the Lights," previously exploded among scientific men.

The *Treatment* of Tubercular Consumption must be principally determined by the period of the disease. These periods are three.

I. The development of pulmonary tubercles sometimes takes place so insidiously as to present no external sign of the fatal process which is going on within. When, however, from the general appearance, conjoined with an observation of the physical peculiarities, or a knowledge of the hereditary predisposition of a patient, the commencement of this process is suspected, all practicable measures should be immediately put in requisition to arrest or retard it. Of these, the most efficient are, respiration of a dry, mild and equable atmosphere; sailing on the water; or, if that be unattainable, regular exercise on horse-back, in a carriage, or the swing; perfect intermission of study and all anxious or fatiguing occupations; sponging of the body, friction, counter-irritants; alteratives, the vegetable and mineral tonics; plain animal diet; and all those agents which are calculated to invigorate the system, and rectify any existing derangement of its more important organs.

II. Irritative cough with accelerated respiration and pulse, wandering pains in the chest, and paroxysms of chilliness succeeded by slight febrile heat, announce the transition of the pulmonary tubercle from an indolent to an active state. The principal remedies applicable to this period, are confinement in a regulated temperature;* silence and repose; mild

* It is much to be regretted that, in this age of intelligence and enterprize, no

unstimulating diet, extensive counter-irritation; and small doses of the Oxymuriate of Mercury. In certain complications, or under peculiar circumstances, of the disease, a reduction of the system by diminished supply of food, and by small but repeated blood-lettings, may be correctly indicated.* But nothing

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institution founded on strictly scientific principles for the reception of pulmonary patients, has been established. The advantages of the climate of Madeira with all the comforts and retirement of private, all the elegancies and blandishments of polished life might, by the combination of great architectural taste and talent with profound knowledge of the application of heat to the sustenance of artificial temperature, be united in the centre of England. Much of the expence, inconveniences, suffering and loss of time, attendant on distant migrations, might thus be saved to the pulmonic and his family: and many valuable lives protracted or preserved by a place of refuge, so readily accessible, from the rigours or vicissitudes of this ungenial climate. Nor would such an establishment be exclusively applicable to the treatment of consumptive diseases. On a subsequent occasion, the writer will revert more fully to a subject which he considers deeply interesting: and hopes to impart to his views a value and precision which they would not otherwise possess, by availing himself of the suggestions and practical knowledge of MR. STEDMAN WHITWELL; than whom no one more perfectly combines all the qualifications requisite for the guidance of those who may contemplate the execution of such a project. The most philosophical notions on the diffusion of heat by the warm-air-stove, are those of the late Mr. Sylvester, as exposed in his well known work *on the Derby Infirmary*.

* A young married Gentleman, of consumptive family, exhibited, in the autumn of 1824, symptoms of impending phthisis; and quitted home for a watering place, in the commencement of the second stage. The excitation of travelling, company, and dietetic errors, induced a state of chronic pulmonary inflammation with occasional spitting of blood. About the middle of November, he exhibited, when first seen by the writer, commencing emaciation; dry hard cough; hurried breathing, hot skin, and rapid pulse. Repeated four-ounce blood-lettings, large doses of Foxglove-powder with Oxymuriate of mercury, confinement to a gruel-diet, warm air, silence and repose, reduced the pulse, in eight days, from 108 to 52; and completely dissipated every remaining symptom. By a fifty-mile journey in mid-winter, however, these cheering results were sacrificed. All the strenuous exertions of the writer to regain the lost ground, were unavailing: and his patient, after six months' rigorous confinement within rooms of a regulated temperature, died in the succeeding autumn.

is more certain than that copious or re-iterated abstractions of blood, rigorous abstinence, digitalis, and the large exhibition of Mercury, are generally inapplicable to this stage: that they exhaust the energies, without at all mitigating the sufferings, of the patient; and accelerate the event which they are erroneously intended to avert.

III. Suppuration once established, the patient's doom is almost irrevocably sealed. Under these circumstances, the removal of the dying pulmonic from home with all the comforts and attentions which home can alone supply, may generally be reprobated as cruel and impolitic. The employment of mercury and all other debilitating agents is now utterly inadmissible. A mild pure atmosphere, anodynes, the inhalation of ether or resin-vapours, or a gentle emetic, will best relieve the cough and breathing, and facilitate expectoration. Sponging with vinegar and water, and the internal exhibition of the mineral acids and the compound Ipecacuanha powder,* will repress the night-perspirations: Opium with astringents moderate the intestinal pain and looseness so frequently attendant on the close of Phthisis. And animal diet with a regulated allowance of good wine, and tonics will pro-

* It is a curious circumstance, and not generally known, that this preparation, one of the best and most unfailing sudorifics, has the power of controlling the colliquative sweats of confirmed phthisis. On this point, the experience of the writer perfectly coincides with Dr. Young's testimony. Sponging with vinegar and water will be found an auxiliary of the "Dover's Powder," as valuable as it is, in general, grateful and refreshing to the patient.

tract the issue, and soothe the discomforts, of a struggle, in which medicine has only the feeble aid of palliatives to offer; and little is left for the physician but to deplore the impotency of his art.*

The passions of the mind, and dietetic errors or excess constitute, as already shewn, the most frequent and prolific sources of intestinal derangement. Yet

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* For an account of the numerous Works on Pulmonary Phthisis, which have appeared from the times of Hippocrates to the period of its publication, see Dr. Young's *Practical and Historical Treatise on Consumptive Diseases*, 8vo. London, 1815. In this learned and elaborate volume, the productions of more than three hundred writers on the subject are enumerated and most ably analysed. It contains also the suggestion of a "very simple and certain" process, by which pus may be distinguished from mucus, in the fluid expectorated by the pulmonic. See page 27. This "optical criterion," if it really prove decisive, will be valuable. The fallacy of the chemical test proposed by the lamented Charles Darwin, has been long universally felt and acknowledged,—The principal publications, which have since emanated from the press, on pulmonary Consumption, are that of Armstrong, referred to at p. 298 of the present Work; the celebrated *Traité du Diagnostic des Maladies des Poumous et du Cœur*, by Laennec, 2e Edit. 8vo. Paris, 1826; and Louis' *Recherches Anatomico-Pathologiques sur la Phthisie*. 8vo Paris, 1825. The two latter are admirable productions. The first has been translated into English by Dr. Forbes; and the substance of it is incorporated in several ably-written articles of the *Dictionnaire de Médecine*, 21 vols. 8vo Paris, 1820—1828. Of Louis' valuable Monograph, there is, at present, no translation.

The *Treatise* of Dr. Granville on Hydrocyanic (Prussic) Acid, scarcely merits even a transient notice. They who, like the writer, have given this remedy a patient and extensive trial in consumptive diseases, will agree with him that it possesses no just claim to the character which it has there acquired. It is a medicine of very uncertain operation; producing sometimes a violent effect in small, and sometimes proving inert in large, doses. In the first stage of Phthisis, it is useless; in the second, its effect is that of a mere palliative: in the last, it is far less certain and efficient than Opium, in procuring rest, tranquillizing the pulmonary and intestinal irritation, and relieving those pleuritic seizures, and Neuralgia-like pains of the lower limbs, which frequently aggravate the sufferings of the pulmonic on the approach of death.

morbid affections of the alimentary canal are sometimes obviously induced, or sustained and aggravated, when originating from those sources, by the intimate connection which exists between the skin and the membranes of the canal in question, the *Cutaneo-Intestinal Sympathy*. The innermost of these membranes, in fact, may be regarded, with the bronchial, as a reflection of the external integument. Intestinal diseases, like those of the respiratory organs, take their designation from the portion or surface of the canal which they occupy. Like them, they may be distinguished into the Acute and Chronic.

Of the divers intestinal affections which result from the influence of atmospheric cold and damp, or sudden variations of temperature, on the skin, the principal are Inflammation of the Pharynx, Diarrhœa, Dysentery, and Cholera-Morbus; and Peritonitis. In the four former, the internal or mucous membrane of the canal is originally and chiefly implicated; the external or serous membrane, in the latter. The functions of the Liver are also very sensibly affected by the impressions of the atmosphere on the surface; and derangement of the organ from this *Cutaneo-Hepatic Sympathy*,* forms an invariable attendant on Dysen-

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* Hence the notorious prevalence of cholera-morbus and liver-complaints in hot climates; and the frequency of jaundice, resulting from chronic affections of the liver, after a long continuance of damp and cold weather, in this country. On this subject, valuable information may be gleaned from Dr. James Johnson's well-known Work on *Tropical Climates*; and from his later Production on the *Atmosphere*, before alluded to.

tery and Cholera-Morbus, if not a condition essential to their development.

The *Symptoms* of *Inflammation of the Pharynx, Cynanche Pharyngea,* on the first onset, resemble those of Quinsy. It results from the same *predisponent* and *exciting causes;* and is sometimes the consequence of a sudden repulsion, or spontaneous transfer, of tonsillar inflammation. The same principles of *treatment* are applicable to it in the early stage. But when, from any cause, the effusion of lymph or pus cannot be averted, the resulting tumour may oppose an obstacle to the introduction of food, and exercise a pressure on the glottis, which will render it a far more perilous affection than tonsillar abscess, and not accessible, like that, to the scalpel from within. If, therefore, suffocation be menaced, Tracheotomy alone will avert the danger. An interesting case of Pharyngitis in which this operation was unsuccessfully performed, has been detailed by Dr. Farre.*

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* See *Medico-Chirurgical Transactions*, Vol. 111, P. 86. The case, although designated Cynanche Laryngea by Dr. Farre, was evidently one of Pharyngeal Inflammation. It terminated in effusion of coagulable lymph about the epiglottis, and suffocation. In another instance of Pharyngitis narrated by Pinel (*Nosographie Philosophique*, Tome 11, P. 243) the parts adjacent to the glottis, were found inflamed and considerably swollen; and the aperture almost obliterated. The sub-mucous cellular structure was gorged with yellowish serum, extending beyond the limits of the inflammation. Exudation on the surface of, and effusion beneath, the mucous membrane are apparently much more common terminations of inflammatory action in the pharynx than abscess. In discussing the subject of Quinsy, it ought to have been mentioned that, under circumstances of impending suffocation, where relief cannot be obtained by the ordinary means, Tracheotomy may become expedient. In a case of pharyngeal inflammation succeeding

The frequent occurrence of derangement of the bowels from the operation of atmospheric vicissitudes on the surface, is familiarly known. It may assume the form of simple *Diarrhœa*, generally curable by such means as well restore the suppressed functions of the skin and allay intestinal irritation:*—*Dysentery*, sometimes consequent on neglected Diarrhœa in diseased subjects; invariably complicated with disordered action of the liver; acquiring, under unfavourable circumstances, an infectious character; often reducible, in its acute stage, by blood-letting, blistering, Calomel, and abstinence,—in the chronic, by a judicious combination of Mercury with Opium and Ipecacuanha, the Alkalis, particularly Lime-water, animal Diet and warm clothing; and terminating, when unsubdued, in ulceration of the intestinal mucous membrane:—and, lastly, *Cholera-Morbus*, an

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quinsy, some years since observed by the writer, he has ever since deeply regretted that this operation was not performed. The leading symptoms were difficulty of deglutition and of breathing; an expression of wildness and anxiety in the countenance; and a state of incessant restlessness and agitation, resembling those which characterize the hydrophobic paroxysm.

* Diarrhœa resulting from cold is, as other spontaneous discharges, in general, a salutary process; and ought never to be repressed by the employment of stimulants and astringents until the functions of the skin have been restored; and the bowels cleared by an aperient, from any irritating matter which they may contain. Inflammation, or other equally dangerous disease, may result from suppression of the intestinal flux without the requisite precautions. Some years since, a stout middle-aged man, suffering from disorder of the bowels, took a powerful astringent. The purging was at once checked; and succeeded by an inordinate flow of pale insipid urine which no remedies were efficient to control. After labouring, for two years, under confirmed *Diabetes insipidus*, he died in extreme emaciation.

acute and most dangerous inflammation of this membrane, which is principally observed when the fervid days of declining summer are followed by chilly nights; and the productions of the vegetable kingdom, employed for human sustenance, have been more than ordinarily abundant. Solid Opium should be first largely given in this disease to allay the incessant and exhaustive vomiting; and followed up by blood-letting, blistering, and by intestinal evacuants as soon as the stomach is sufficiently tranquillized to retain them. Even in the milder character, which Cholera-Morbus usually displays in this climate, it has been sometimes known to terminate, after the lapse of a few hours, in destruction of the intestine by gangrene.

The Peritoneum is that membrane which invests the stomach and bowels and their accessory organs, as the Pleura envelopes the lungs. Not only, however, does it enclose all the viscera contained in the abdomen; but it gives a partial covering to the kidneys, urinary bladder, and to the uterus in the female. It is then applied over the internal surface of the abdominal muscles; and thus, like the Pleura, exhibits two divisions; which, for want of more precise designations, may be termed the visceral and the reflected.*

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* The imaginary space between these two surfaces of the Peritoneum constitutes, in scientific language, the cavity of the abdomen or belly. Yet, in the natural state, there is no cavity: for the abdominal muscles are in close contact with the bowels. Here the fluid of Ascites, common dropsy of the belly, is accumulated. The effusion of this fluid from the vessels of the membrane, and ad-

The former may again be subdivided into several portions according to the organ of which it constitutes the external coat.

Peritonitis, Inflammation of this delicate and extensive membrane, is more rarely an original than a consecutive affection. For the most part, it results from inflammatory action, commencing in the mucous membrane, or in the solid structure, of other organs, as the stomach, uterus, or liver; and subsequently extending to that portion of Peritoneum which lines the abdominal muscles.* When original, however, it probably first attacks the latter; and is then *excited* by cold, atmospheric vicissitudes, or the infliction of external injury. It is invariably *characterized,* and may be *distinguished* from other acute affections of the in-

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hesion between the internal surface of the abdominal muscles, and the exterior of the bowels, are the most frequent consequences of unsubdued peritoneal inflammation. By the latter process, the cavity of the abdomen is partially or wholly obliterated. A most perfect instance of this obliteration was observed by the writer on the dissection of a boy destroyed by scrofulous inflammation of nearly the whole track of the intestinal canal. See *New Medical and Physical Journal,* Vol. IX, P. 29.

* A well-marked case of Peritonitis resulting from chronic inflammation of the large intestine, is detailed in the 10th Volume of the *New Med. and Phys. Journal,* P. 453. The disease was consequent on an attack of Scarlatina; at first treated as a complication of dropsy with diseased liver; and its real character not recognised until an incurable change had occurred in the structure of the inflamed portion of bowel. Mortification of the descending colon, and extensive peritoneal adhesions, were discovered on dissection by the writer. From the facts exposed at p. 157 of the present Work, it is probable that the Peritonitis of puerperal women has its origin in inflammation of the uterus. On the subject of Peritonitis, see Dr. Pemberton's *Work* before quoted;—and Abercrombie's *Pathological and Practical Researches on Diseases of the Stomach, the Intestinal Canal,* &c. 8vo. London, 1828.

testinal canal, by the distension of the bowels and intolerance of pressure. The *Terminations* and *Treatment* of both its species, acute and chronic, are the same as those of inflammation of the other serous membranes. Peritonitis, however, be it recollected, will require practice somewhat different from that of inflammation of the other structures of the intestinal tube. The observations, heretofore made on the diversities of treatment respectively indicated in Pleuritis and Pneumonitis, are here precisely applicable. But when Peritonitis, even in its simple form, is unusually violent;—when it is complicated with, or consequent upon, inflammation or injury of the organs contained in the abdomen or pelvis, local blood-letting and blistering will no longer suffice to accomplish its reduction. The more rigorous treatment must then be modified by the character and severity of the coexisting or original disease.

Chronic enlargement of the Thyroid Gland, and of the Tonsils; and Scrofulous Swellings of the superficial and deep-seated Absorbent Glands, are the morbid affections which principally result from the connection existing between the surface and glandular structure of the human body,—the *Cutaneo-Glandular Sympathy*.

Bronchocele, or the *Full Throat* as it is popularly designated, resulting from enlargement of the Thyroid Gland, has by different writers, been attributed to different causes. The dietetic employment of very hard water is the most commonly suspected agent in

its production. By females, on the contrary, in whom its occurrence is much more frequent than in males, the origin of the tumour will generally be traced to external injury, or the inordinate retention of the breath during the pains of parturition. The evidence of the experienced and enlightened Foderé* on this subject, is singularly clear and decisive. He was born in a Sub-Alpine district where Bronchocele is very prevalent; and, himself, suffered from the disease in his early youth. He asserts that its attacks are exclusively confined to the inhabitants of the Alpine vallies, by the close and sultry atmosphere of which an unusual quantity of aqueous fluid is held in solution; and that removal to a more elevated residence constitutes an essential mean for the dispersion of the swelling. Daily experience will serve to corroborate the preceding testimony. In low and damp situations of this island, the younger females are peculiarly obnoxious to Bronchocele: while in the more open, dry, and hilly districts, the traces of the disease will, in general, be much more rarely descried. The *exciting cause* of Bronchocele is, therefore, atmospheric

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* See his *Traité du Goitre et du Cretinisme*, 8vo. Paris, An. viii. This is an interesting and really philosophical work; and exhibits by far the best view of the structure, functions, and pathology of the Thyroid Gland with which the present writer is acquainted. The errors of preceding authors respecting the causes of Bronchocele are most satisfactorily refuted by Foderé: and the correctness of his own inferences, relative to its atmospheric origin, demonstrated by an incessant appeal to cautiously-observed facts. An eloquent and masterly "Discourse, on the Influence of a humid Atmosphere upon the Human Intellect," ushers in the work.

humidity, operating upon a system *predisposed* to its noxious influence either by original peculiarity of constitution, innutritious aliment and other depressing agents, or a combination of both. Its *proximate cause* is an accumulation of lymph in the structure of the gland. The swelling is indolent, painless; rarely, if ever, *terminates* in suppuration; and has sometimes been known to subside spontaneously. In general, it goes on slowly increasing, until it has attained an unsightly, and, in some instances, enormous volume; and opposes by its pressure on the windpipe and jugular veins, a formidable obstacle to respiration and to the regress of blood from the brain. It is occasionally *complicated* with enlargement of the absorbent glands in the neck, and with other indications of the scrofulous diathesis. The identity of Bronchocele with Scrofula is denied by Foderé. He, however, acknowledges that the two diseases affect subjects similarly constituted, and result from similar causes.

In the *Treatment* of Bronchocele, a diversity of result is frequently observed which no appreciable difference in the external characters exhibited by the swelling, will explain. Thus, alterative doses of Mercury assisted by the pure Alkalis, have sometimes accomplished the removal of an old and voluminous Bronchocele:* while another, of comparatively small

* A Bronchocele, of very long standing, was completely dissipated in a middle-aged female by a few doses of blue pill and solution of pure potash; which the writer prescribed for the cure of an intestinal affection.

bulk and recent origin, will obstinately resist the most energetic measures, general and local, employed for its dispersion.

Iodine, the active ingredient of burnt sponge, is the remedy now principally relied on for the cure of Bronchocele. But it is a dangerous and uncertain agent; frequently inducing by its influence on the absorbent system, extreme emaciation and other consequences more formidable than the disease which it is administered to remove. Great vigilance and circumspection are, therefore, requisite in its use.*

Continued pressure, friction with the flesh-brush or mercurial, antimonial, or other stimulating applications, blisters, setons;—Mercury in purgative or merely alterative doses, the pure Alkalis, vegetable and mineral Tonics: animal Diet, regular Exercise, and especially respiration of a dry atmosphere, are the means which will most efficiently operate in procur-

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* A middle-aged corpulent woman was directed to take ten drops of Tincture of Iodine three times a day, for the cure of a large bronchocele; and gradually increase the dose to twenty drops. Within a month, the swelling had disappeared; and, with it, the bulk of the mammary glands, and the whole adipose substance of the body. The woman died shortly afterwards; but the nature of her disease is not known. By a long-continued use of burnt sponge, the health of many persons is said to have been destroyed. The Lady, who forms the subject of the case of contracted stomach, published in the *Medico-Chirurgical Journal*, Vol. I, p. 10, confidently attributed her dyspeptic symptoms to the employment of this remedy. For an account of the medicinal properties and application of Iodine, see Coindet's Memoir, *Journal de Pharmacie*, Oct. 1820; or an abstract of it, *Medical Repository*, Vol. XIV, p. 506. The "*Medical Researches*" of Dr. Manson, on the same subject, would be rendered more valuable by condensation of the numerous and important facts which it contains.

ing the absorption of Bronchocele, and repairing the constitutional defect which has favoured its development; when the Iodine has failed, or there exists any well-founded objection to a trial of its extraordinary powers. Those who, from an intimate knowledge of the anatomical relations of the Thyroid Gland, can appreciate the dangers of its excision; or reflect on the fatal result of former attempts to arrest its morbid growth by the ligature of its arteries, no ordinary consideration will induce to incur the responsibility of recommending either of these operations.*

An *Indolent Enlargement of the Tonsils* is frequently observed in young and delicate subjects;—in the female more frequently than the male. It is sometimes *complicated* with Bronchocele; affects persons of a similar constitution; and is determined by the same *causes*. Signs of intestinal torpor or derangement usually exist with it: and hence it is, in general although erroneously, attributed to that source. The enlarged gland exhibits a dark-red, spongy, and irregular surface; which readily ulcerates on the application of cold or other debilitating agent; but is more frequently studded with patches of a morbid secretion closely adherent to it and, by the hasty obser-

* A successful case of extirpation of a scirrhous Thyroid Gland, occurred in the practice of Desault. See the *Œuvres Chirurgicales* of that celebrated surgeon, Vol. II, p. 298. A young woman, however, in whom reduction of a large bronchocele was attempted by ligature of the superior thyroideal arteries, died from hemorrhage consequent on the operation, in one of the London Hospitals.

ver, mistaken for ulceration. It sometimes has even been *confounded* with Quinsy; and the situation of the patient been aggravated by the active treatment which this erroneous view would naturally suggest. Deglutition and breathing are painfully, and the elocution disagreeably, affected in the progress of the swelling. Neglected, it may, at length, attain such a volume as to require a surgical operation for its removal. The *Medical Treatment* consists in the application of stimulants, internal and external, to the diseased gland; and the exhibition of those remedies which will invigorate the general health, and remove the concomitant disorder of the intestinal canal.*

The commencement of *Scrofula* is commonly announced by swelling and induration of the superficial absorbent glands, a sense of general debility, and all the accustomed signs of intestinal torpor or derangement. The glands in the neck are often, although not invariably, first affected. An hereditary predisposition to the disease usually exists in those who suffer from it; and is impressed upon the physiognomy in characters which no accurate observer can mistake. But the exciting cause may be so powerful or long applied, as to determine the attack where no such pre-

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* A solution of Nitrate of Silver or Sulphate of Zinc, forms an excellent topical application, employed as a gargle, in these cases: while an occasional purgative of Calomel and Rhubarb, the Akalis combined with Iron or Cinchona, plain animal Diet and Exercise, are the most effective agents in the constitutional treatment.

disposition has been observed. Thus, Typhus or Scarlet-fever, when extraordinarily protracted or severe, has been known to induce Scrofula in children of the most healthy parents; and young persons quitting the genial climate of India for the damp and variable atmosphere of Britain, very generally suffer from its ravages. The principal *exciting cause* of Scrofula, then, is atmospheric humidity and cold: the operation of which will be greatly aggravated or assisted by want of exercise; unwholesome and defective diet; and every agent, moral or physical, whereby the energies of the system may be depressed. The *proximate cause* of this disease is unknown.

Enlargement of the mesenteric glands, preceded by, or complicated with, a morbid state of the mucous membrane of the intestines, and terminating in abscess or ulceration; and diseases of the bones and joints, especially of the spine, hip, knee, and ancle, are the common *consequences* of scrofulous action, neglected or unsubdued. They sometimes form the earliest indications of its presence. Many of the most inveterate cutaneous affections may be clearly traced to a scrofulous origin. The intimate connection which exists between mesenteric and spinal diseases, and tubercular consumption, has been previously noticed.

The *Treatment* of Scrofula should have, for an object, the removal of that debility of the system which predisposes it to the attack; and its protection from the continued influence of the various exciting causes. Plain animal food with good malt-liquor or wine, ac-

tive, exercise in a dry pure atmosphere, the salt bath, friction, the interposition of a flannel-dress between the surface of the body and the atmosphere,—are the general remedies best fitted to answer these indications. In the dispersion of scrofulous swellings of the glands or joints, the large internal employment of pure potash, combined with mercurial frictions, as recommended by the late Mr. Brandish, will be found a valuable auxiliary, or the modification of this practice recently promulgated by Mr. Scott.* Upon the more confirmed and unyielding cases, Oxymuriate of mercury, given alternately, or in conjunction, with Cinchona or other tonic, will produce effects more strikingly beneficial than the cautious mind would be disposed to admit on any evidence except that of demonstration.†

Leeching, the continued application of evaporating lotions or poultices, blistering, frictions, or electricity, aided by judicious constitutional treatment, will com-

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* See *Observations on the Use of Caustic Alkali in Scrofula and other Chronic Diseases.* By Joseph Brandish, 8vo.;—and *Surgical Observations on the Treatment of Chronic Inflammation*, &c. By John Scott Esq. 8vo. London, 1828.

† The writer has, for some years, extensively employed the Oxymuriate of Mercury in Scrofula. The trial of it was first suggested to him by the perusal of the eccentric but sagacious Dr. Marryat's *Therapeutics*. It constitutes the active ingredient of the "Vegetable Syrups" and other empirical remedies which have acquired celebrity in the cure of Scrofula and "Scorbutic Diseases:" and is the basis of the popular practice by which many limbs condemned to amputation, have been preserved, in the midland counties. The application of a tight bandage kept constantly wet with cold water, will often greatly promote the efficacy of the medicine, in scrofulous affections of the joints.

monly suffice to repel a scrofulous tumour, or even procure the absorption of its contents when suppuration has taken place. If, however, this salutary object be defeated by neglect or mismanagement of the disease in its earlier stages, and gradual absorption of the integument indicate the approaching rupture of the abscess, its contents should be immediately evacuated by an incision made in the sound skin; the edges of which will re-unite by the first intention. And thus the occurrence of a tedious and offensive sore, and the unseemly puckering of the integument resulting from its cicatrization, will be avoided;—a consideration of no trifling moment where the face, the female neck or arm, constitutes the seat of the disease. The exhibition of the pure Alkalis, with the milder preparations of Mercury and the subsequent aid of slight mercurial frictions, is especially applicable to the treatment of scrofulous enlargement of the mesentery or the affection of the mucous membrane of the intestines by which it is commonly preceded.*

Cases frequently occur, in which the removal of a scrofulous limb presents the only visible mean of rescue from suffering and death. Under these circumstances, it behoves the medical attendant to calculate, with all attainable precision, the chances of ultimate recovery; and determine whether those chances be such as will justify himself in recommending, and his patient in submitting to, a dreadful operation. Cau-

* See Mr. Goodlad's valuable *Practical Essay on the Diseases of the Vessels and Glands of the Absorbent System*, 8vo. London, 1814.

tious inquiry can alone afford grounds for the delivery of a correct opinion. Every region of the body,—particularly the chest, spine, and abdomen,—the intestinal and urinary discharges, should be most rigorously examined. If there have been repeated or copious expectoration of blood or pus, or the stethoscope indicate any morbid alteration of the pulmonary organs;—if the spinal bones be extensively affected with caries;—if from the discovery of a tumour in the abdomen, with the presence of chyle in the fecal evacuations, the establishment of confirmed mesenteric affection may be clearly inferred;—or an incurable disease of the kidney, from an appreciable enlargement of the urinary organ, or the admixture of blood or pus in the fluid which it secretes,—the operation will only inflict upon the patient an unavailing torture; and grievously disappoint the hopes of all those who are interested in the result.

The close connection which subsists between the Kidneys and the Skin, is as explicable as notorious. Both are destined to separate an excrementitious fluid from the blood. If the cuticular functions be unusually excited by warm air or exercise, the secretion of the kidneys will be proportionately diminished: and the sudden or continued application of cold to the surface will be followed by an inordinate flow of urine. Sometimes, when the action of the kidneys has been completely suppressed, an urinous odour is very perceptible in the fluid secreted by the skin.*

* Great advantage might probably be derived from attention to this sympathy

The principal diseases, which result from this sympathy of the surface with the kidneys, the *Cutaneo-Renal Sympathy*,—are a congestive and irritable state of the latter organ, inflammation, and its various consequences. Morbid affections of the kidney, originally emanating from other causes,—as Diabetes and Calculous Disorders,*—may, again, be sustained or aggravated by the influence of the atmosphere upon the surface.

Inflammation of the kidney, Nephritis, seldom occurs as an original affection. It is generally determined by the irritating presence of an urinary concretion or the infliction of mechanical injury. When unconnected with these causes, it may commonly be traced to the application of external cold. A kidney suffering from previous irritation, will be more readily excited into inflammatory action than the healthy organ.

Nephritis may be acute or chronic. The *Former*

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in some diseases. Thus, warm air, exercise, and friction, or other mean by which the arid and hide-bound skin of the diabetic patient may be restored to its healthy functions, would surely moderate the determination to the morbid kidneys; and the tendency to deposition of uric acid or calcareous matter in the bladder might be repressed by such measures as would, on the other hand, diminish the cuticular discharge, and maintain a flow of urine sufficiently copious to hold these substances in perfect solution. In an almost exclusive attention to the intestinal canal, the kidney which exerts an important influence upon many diseases, and presents valuable indications in their treatment, has been, during the last thirty years, overlooked or well-nigh forgotten.

* On these diseases, the valuable writings of Rollo, Watt, Prout, Marcet, Howship, Magendie, and Brande (*Quarterly Journal of Science and the Arts*,—Vol. VI—VIII) may be consulted with advantage. Not generally dependent on atmospheric influence, they cannot be here, with propriety, discussed.

is *characterized* by violent pain in the region of the kidney, extending down the ureter; frequent micturition; vomiting; numbness of the leg; and, in severe cases, soreness and tumidity of the abdomen from extension of the inflammatory action to the peritoneum. It may *terminate* in resolution; chronic inflammation; suppuration with consequent demolition of the structure of the kidney; and gangrene. The *Treatment* consists in Blood-letting, general and local, Opium, Sudorifics, the hot Bath, Fomentations, Counter-irritants,* Aperients, Abstinence, and Rest.—The *Latter* is commonly a very protracted and insidious affection. The *symptoms* which it exhibits, are obscurely marked or equivocal, and either neglected, or referred to some more ordinary source of irritation, particularly the stomach; which most intimately sympathizes with it. Consequently, the real nature of the disease is rarely made out until the healthy structure of the kidney is destroyed. It may *terminate* in enlargement, ulceration, or abscess, of the organ.† Sometimes

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* Of these, the mustard-poultice is most eligible. Blisters, by their well-known property of irritating the kidney, are excluded from employment in Nephritic inflammation.

† In a robust middle-aged gentleman, who, after long discharging large quantities of uric acid, was attacked with pain in the loins on getting wet; never afterwards voided any gravel; but suffered, many years, from complaints which, as attended with indigestion and heartburn, were constantly referred by his physicians to the stomach,—the two kidneys were found enormously *enlarged*,—each weighing between five and six pounds; their peritoneal covering thickened and inflamed; one pint of serum in the abdomen; stomach and other organs quite sound.—In a *scrofulous* boy, both kidneys were seen *enlarged*, filled with *pus*, and *ulcerated*. *New Medical and Physical Journal*, Vol. IX, p. 33.—And, in the

it is evidently connected with Scrofula. The suffering attendant upon it, may be most effectively palliated by Opium; external warmth; the institution of a purulent drain in the vicinity of the diseased kidney; mild aperients; and a nutritious but unstimulating Diet.

Rheumatism, Inflammation of the diaphragm, and of the heart, are the morbid conditions which most commonly or conspicuously result from the sympathy of the Muscular System with the Skin,—the *Cutaneo-Muscular Sympathy*.

The frequent *origin* of Rheumatism from exposure of the body to damp, cold, or sudden aërial vicissitudes, is well-known. It is *discriminable* from *Neuralgia*, by the characters which have heretofore been traced;* from *Paralysis*, and other affections of cerebral or spinal origin, by the absence of those peculiar signs which indicate disorder of the brain and

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body of an intemperate man who had long suffered from complicated liver and nephritic disease, the left kidney formed a tumour containing "nearly five pints of thin, grey, and offensive *pus*, mixed with firm irregular lumps of a concrete substance resembling the cheesy matter of a *scrofulous* abscess." *Medical Repository*, Vol. XII, p. 204. In all these cases observed and examined by the writer, the enlarged kidney might be clearly traced during life, by the projection which it formed anteriorly in the abdomen, between the lower rib and the margin of the ilium. The unfortunate boy, who forms the subject of the second case,—had the tumour of the kidneys, and the bloody and purulent condition of the urine connected with it, attracted timely notice,—might have been spared the sufferings of amputation to which he was subjected for the removal of a diseased knee-joint.

* See page 246 of the present work.

nervous system :—and from *Gout*,* by a review of the habits and occupations of the patient; the less excruciating severity of the pain; and by the non-appearance of that derangement of the stomach which almost invariably signalizes an attack of the latter disease. Rheumatism may be acute or chronic.

Acute Rheumatism is a most painful and lingering complaint. It may be *distinguished* from the Chronic, in which it frequently *terminates*, by the presence of fever; and is farther *characterized* by profuse perspirations, and such a state of the intestinal and urinary evacuations as incontestably indicates disorder of the functions of the liver. It frequently is *complicated*, or rather alternates with, acute affections of the organs contained in the chest or abdomen. The following plan of *Treatment* has, for eighteen years, been pursued by the writer, with signal and almost unvaried success. One moderate blood-letting from the arm, regulated in amount by the age and habit of the patient and the severity of the symptoms, and followed by a brisk purgative of Calomel and Antimony; a four or five-grain dose of blue Pill every six hours, with an effervescing draught in the intervals, and a

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* As Gout, although sometimes excited into activity by atmospheric causes, is more properly a disease of intestinal origin, no distinct notice of it here can be admissible. For ample information on this subject, the reader is referred to Dr. Scudamore's celebrated *Treatise*;—the elaborate Article, *Goutte*, in the *Dictionaire des Sciences Médicales*, T. XIX;—or an excellent condensation of the latter, with many original remarks, in Dr. Johnson's *Influence of the Atmosphere*.

mild saline aperient* every morning: confinement in a dry, warm, but well-ventilated room; abstinence; and frequent fomentation of the inflamed joints with hot decoction of poppy-heads or chamomile. The mercurial is continued until the secretions from the bowels and kidneys have resumed a natural appearance, and the gums generally exhibit a slight turgescence. The repetition of the saline aperient twice or thrice a day is then substituted for it; active friction of the joints, for the fomentations. And the recovery of lost power is left to the native energies of the system, or merely assisted by the prescription of a plain nutritious diet.

From numerous and varied experiments in the treatment of Acute Rheumatism, the writer considers himself justified in the deduction of the following inferences:—The preliminary blood-letting is essential to the success of the plan which has just been traced; but ineffective if not promptly followed up by the mercurial course. Profuse or re-iterated loss of blood, like the continued use of drastic purgatives, while it exhausts the strength, aggravates the discomforts of the patient and renders tardy or imperfect the process of recovery.—The mercurial plan, unless preceded by the blood-letting, loses much of its efficacy. Combi-

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* The best aperient, in these cases, is a Solution of Sulphate of Magnesia (Epsom Salts) either in Infusion of Roses; or, with the addition of a few grains of carbonate of Magnesia, in Mint-water.

nation of Opium, Antimony, or Ipecacuanha with the blue pill impairs or utterly defeats its salutary operation. Its employment in large doses is injurious. Neither Calomel nor other preparation of Mercury can, with equal advantage, be substituted for it. In order to secure a favourable result, the exhibition of the remedy must be steadily continued until decisive evidence of its action upon the system has been obtained.—The attempt to expedite recovery after the discontinuance of the mercurial, by Cinchona and other tonics generally induces a recurrence of pain with febrile irritation; deranges the intestinal functions; and impedes the work of reparation.—And, finally, the treatment of the disease by repeated blood-letting, purgatives, and other debilitating means; by powerful sudorifics; and by tonics, is far less productive of immediate relief,—less speedily and permanently effective,—than the mild and simple plan which has just been described. No instance is yet known to the writer; in which acute Rheumatism, fairly submitted to this treatment, has terminated in the assumption of the chronic form.

Restoration of the natural functions of the skin is the object principally indicated in *Chronic* Rheumatism. Powerful stimulants, internal and external, and violent muscular exertion,* are the popular re-

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* See "An Account of a New Mode of Treatment in Chronic Rheumatism, by Dr. Marcet. *Medico-Chirurgical Transactions*, Vol. III. This plan consists in exciting a profuse perspiration by exercise under a load of fleecy hosiery and

medies most commonly employed with this view. The more ordinary and successful agents in regular practice, are the various topical and general excitants, as blistering, frictions and other manual processes,* electricity; Guaiacum, Ammonia, and Colchicum† internally; and Tonics, as the Shower-bath, Iron, and Cinchona. Where the case is particularly obstinate, and connected with a morbid state of the intestinal canal and liver, Calomel and Opium, Cupping, and the warm Bath, may be employed, previously to the exhibition of tonics, with excellent effect. Instances, again, are not uncommon, wherein the rheumatic affection appears evidently complicated with thickening and tenderness of the bones and ligaments of the spine. Whether, in these cases, the spinal alteration

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flannel; and in the case there narrated, was perfectly successful. On the same principle, the envelopment of a rheumatic patient in blankets wrung out of hot water, while the skin is excited to action by repeated draughts of warm diluted spirit or a large dose of Dover's powder, has been sometimes most beneficially employed.

* Acupuncturation, the Chinese process, described and recommended by Mr. Churchill, in his *Treatise*, 12mo. London, has been productive of no permanent relief, in the writer's practice.

† The wine of the Seeds of Colchicum, as prescribed by Dr. Williams, in his interesting communication (*Medical Repository* Vol. XIV.) will be found one of the most active and unerring preparations of this powerful plant. The administration of it, however, should be commenced in much smaller doses than Dr. Williams recommends. One drachm, given to a patient of the writer, induced the most exhausting diarrhœa with tenesmus. Even adult subjects, he finds, will not at first bear more than one third of that dose. Mr. Alsop, a highly intelligent and experienced practitioner of Uttoxeter, prefers to all preparations of Colchicum, a very strong tincture of the *fresh root* in white wine.

constitute an essential part of the disease from its commencement;* or whether it be merely the result of irritation propagated from the muscular system to their origin by the spinal nerves, the writer presumes not to decide. Certain it is that, in old and severe cases of chronic rheumatism, an enlargement will frequently be found to exist about the junction of the cervical and dorsal portions of the vertebral column;—that the disease can only, under these circumstances, be effectually or permanently remedied by measures directed to the cure of the spinal complication;—and that when unobserved and neglected, the affection of the spinal bones may terminate in caries, incurable paralysis, and death.†

Lumbago consists in rheumatic inflammation of the

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* The writer is rather inclined to adopt this opinion, by re-iterated experience of the excellent effects of irritating applications to the spine, especially when seconded by the employment of Colchicum-wine and Ammonia, even in *recent* cases of chronic rheumatism. Spinal irritants, it may be here observed, furnish an admirable auxiliary in removing constipation of the bowels connected either with this or other chronic affection. The mode, in which they operate through the medium of the spinal marrow, upon the torpid intestine, is not very obvious. The fact, however, is as certain as it is valuable.

† A middle-aged sickly-looking man, who had long been under medical treatment without relief, for chronic rheumatism, consulted the writer. His attention was strongly excited, at the first glance, by the attitude and peculiar physiognomical expression of the patient. The slightest attempt to bend or rotate the head upon the spine, was productive of excruciating agony. The limbs exhibited all the signs of commencing paralysis: the speech was indistinct: the vigour of the mind evidently impaired. On examination, the whole of the cervical spine was found completely diseased; and intolerant of pressure. Caustic-issues and Ammonia were prescribed without avail. Shortly afterwards, the man's head suddenly fell forward on his breast, and he died without a struggle.

muscles of the loins. It is *determined* by the same *causes* as Rheumatism in other regions: and may be *distinguished* from affections of the kidney, by the pain and difficulty experienced in moving the trunk upon the lower limbs. It may assume an acute or chronic character, The *Former* is signalized by excruciating pain, sense of deep-seated heat in the loins, and all the phenomena of the inflammatory state: and will require much more active *Treatment*, especially by blood-letting, than is commonly indicated in rheumatic fever.* The *Latter* may generally be soon removed by cupping, blistering, or antimonial frictions, and the internal use of Calomel and Opium, followed by Ammonia, Tonics, and the Cold Bath. Daily ablution of the body with cold water, friction, regular exercise, and simple diet, are the best preventives against the recurrence of rheumatic affections. To these may be advantageously added a light but warm apparel; such as will require but very little variation in the summer months.

Inflammation of that important muscle, the Diaphragm, *Diaphragmitis*,† seldom occurs as an original

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* See a valuable case detailed by Dr. James Kennedy. *Medico-Chirurgical Journal*, Vol. IV, p. 104. To this affection, as principally implicating the great Psoas muscle, it has been proposed to affix the term, *Psoitis*.

† Called also, with obvious inaccuracy, from being occasionally attended with Delirium, *Paraphrenitis*. See Parr's *London Medical Dictionary*, Vol. II; Pinel's *Nosographie*, T. II;—and the Article, *Diaphragmite*, in the *Dictionaire des Sciences Médicales*, Vol. IX. Suppuration is probably a frequent consequence of inflammation of the diaphragm in the sheep. It has been observed by the writer on the bodies of several which had died with hoarse cough, panting respiration, intense thirst, and emaciation.

disease. It is generally *consequent* on inflammatory action attacking the pleura or pericardium above, or the peritoneum below, and afterwards implicating the adjacent muscle. Such was the nature of the only two cases yet observed by the writer. They were both rapidly fatal.* The existence of original Diaphragmitis may, however, be inferred, if signs of violent internal inflammation, with pain in the region of the diaphragm, hickup, and deep distress of countenance, directly follow the application of cold, or the sudden recession of rheumatic inflammation from the joints. It is said to *terminate* in adhesion, abscess, or gangrene. Profuse blood-letting and blistering are the only remedies entitled to confidence in its *Treatment*. But with whatever activity employed, they will rarely avail.

The muscular structure of the Heart may become, in like manner, the seat of active inflammation. This affection is termed *Carditis*. It is rarely, however, observed in an original or simple form. In general, it is either *consecutive* on Pericarditis, or *complicated* with that, or with inflammation of some other organ. Its prominent *characteristics* are pain in the region of the heart, accompanied with palpitations, faintness, and a hurried and irregular pulse. It is described as sometimes existing in a latent shape, and consequently exhibiting no appreciable external

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* See Note †, Page 301 of this Work.

signs. It may *terminate* in chronic disease, ulceration, abscess, or gangrene. Copious blood-letting, blistering, abstinence, and rest constitute the outline of its *Treatment*. Digitalis, as one of the most powerful sedatives, may probably be added with advantage.

Inflammation of the heart, obviously of rheumatic character, frequently occurs during the invasion of acute Rheumatism; and is a most dangerous affection. It may be *distinguished* from ordinary Carditis by its development on the sudden recession of rheumatic inflammation from the joints. It has sometimes followed the exposure of the patient to a current of cold air, or the application of refrigerating lotions to the inflamed parts.* In subjects destroyed by it, the heart, upon dissection, is found in a peculiarly soft and lacerable state. There is sometimes exudation of lymph upon the surface of the organ, with thickening of the pericardium, and an effusion of turbid serum into its cavity.

When, therefore, during an acute rheumatic seizure, the inflammatory action abruptly quits the joints;

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* The application of cold to the inflamed joints is a practice alike dangerous and comfortless in Rheumatism. Some years since, a patient was made exceedingly ill by it; and declared to the writer that it had aggravated his sufferings. On the substitution of hot fomentations, he expressed great comfort, and almost instant relief from the pain of the stomach, sickness, and shivering which the employment of cold had induced. Transfer of rheumatic inflammation may take place to the stomach, lungs, or brain, as well as to the heart. Instances of all these varieties of "rheumatic Metastasis" are cited in Dr. Johnson's Work. This and Dr. Scudamore's *Treatise* are the best English publications extant, upon Rheumatism.

and palpitations of the heart, with the other symptoms just enumerated, quickly follow, little doubt can exist as to the nature of the change which has taken place. One of the most important organs of the system has been attacked with inflammation: and the patient's life is dependent on the energy and decision of the practitioner. Blood should instantly be drawn in a large quantity from the arm; warm flannels or sinapisms be applied to the extremities; and no measures be neglected which may contribute to lessen the impetus of the blood through the cavities of the heart, or recall the inflammatory action to the distant and less delicate organs which it had previously occupied.*

It frequently happens that, by vigilance and active treatment, the inflammation, in these cases, is considerably reduced; and the patient thus rescued from immediate danger. Yet, either from want of due perseverance in the curative plan, or some unfortunate peculiarity in the nature of the case, a state of chronic disease becomes established in the heart: and thus a process of morbid alteration is set up, which ultimate-

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* Rheumatic affections of the heart were first distinctly noticed by Sir David Dundas, in a valuable communication which appears in the first Vol. of the *Medico-Chirurgical Transactions*. Several histories of this kind have subsequently been published; of which a copious review is given in Dr. Johnson's work before quoted. The case related by Mr. Russel, of Birmingham, in the 10th Vol of the *Edinburgh Journal*, and the Memoir of Dr. Matthey, to which allusion will be made in the succeeding note, are particularly interesting. See also a collection of cases by Dr. Wells, in the 3rd Volume of *Transactions of a Society for the Improvement of Medical and Chirurgical Knowledge*.

ly destroys life. Chronic inflammation, of rheumatic character, constitutes in fact, when neglected or unsubdued, one of the most common sources of organic lesion of the heart.*

Progressive dilatation of the cavities of the organ, with a diminution rather than increase of the thickness of its muscular walls, and the peculiar softness and flaccidity of structure heretofore described, is the ordinary form of deviation from the healthy state which the heart, under these circumstances, exhibits. A gorged condition of it, with fluttering and irregular action, aggravated by exercise or mental emotion, is the natural result. The veins of the lungs, the liver, and the heart itself, no longer able to return their contained blood with the wonted ease and regularity, become distended; and thus, congestion of the lungs and bronchial membrane with disordered breathing, cough, and bloody expectoration,—of the liver and alvine canal with derangement of the biliary and intestinal functions,—and of the substance of the heart with an aggravation of its previous irregularity,—ensues; and induces hydrothorax, or ascites with general dropsy, and effusion into the pericardium. Sudden extinction of life by swooning or suffocation ordinarily closes the hopeless conflict.

Such is the origin and progress of the majority of

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* See the opinion of Dr. Matthey, of Geneva, cited by Dr. Johnson, from the translation of the Swiss Physician's Memoir in the 10th Vol. of the *New Medical and Physical Journal.*

cases of diseased heart which terminate in Dropsy. The same series of morbid actions may, however, result from a chronic affection of the bronchial membrane inducing pulmonary congestion, and dilatation of the cavities of the heart as a consequence of that state. Yet Dr. Hastings evidently errs in the indiscriminate reference of all instances of diseased heart complicated with dropsy, to a bronchial source. Congestion of the bronchial membrane certainly exists in dilatation of the cavities of the heart from rheumatismal irritation or other cause, as a natural result of the gorged state of the pulmonary vessels; is farther kept up or excited by exposure to atmospheric vicissitudes; and re-acts upon the affection of the heart. Many cases have been observed by the writer wherein all the phenomena of lesion of the latter organ clearly preceded the development of the bronchial irritation. The Treatment of the disease, whether originally emanating from the bronchia or the heart, is, however, essentially the same: and on the admirable plan recommended by Dr. Hastings, eulogium or attempt at improvement, would be alike superfluous.* By a judicious combination of active diuretics,† the dropsical

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* See Chapter V. of Dr. Hastings, *Treatise*. It cannot be too attentively read by all those who are anxious to acquire clear and correct notions on the pathology and treatment of dropsy.

† The admixture of various diuretics is most erroneously reprobated by Dr. Blackall. The writer has invariably derived beneficial effects from a combination of all the more active diuretic agents, in the treatment of dropsy. In this opinion, he is supported by the powerful evidence of Dr. Hastings and Dr. Ferriar,

swelling may be for a while dissipated; but, if the structure of the heart itself be primarily or consecutively injured, the effusion will sooner or later inevitably recur, and destroy the patient; unless he, meanwhile, be cut off by pulmonary hemorrhage or ulceration.

In forming an opinion on the probable result of any case of general dropsy, it becomes highly necessary to determine whether or not it originates in, or is complicated with, a morbid affection of the heart: and by minute investigation of the history and external characters of the disease, this important fact may, in general, be with great precision determined. If the dropsical symptoms have been preceded by violent palpitations or irregular action of the heart;—if the pulsation of the organ be extraordinarily diffused so as to be distinctly perceptible in the epigastrium and in the summit of the chest;—if the whole region of the heart render, on percussion,* a sound unusually dull;—

(See his *Medical Histories and Reflections*, Vol. IV. p. 41.) The reasoning by which the latter seeks to explain the fact is, however, very fanciful. In all cases of dropsy of the chest, and of the abdomen when complicated with affections of the heart, the Foxglove, in *powder* or *infusion*, will be found a valuable remedy; but against Ascites originating from liver-disease, it will avail little. Mercurial frictions, drastic purgatives, and copious administration of broom and dandelion-infusion, should consequently, in the latter complication, be preferred to the Digitalis.

* The processes of Thoracic Percussion and Abdominal Pressure, here mentioned, may be employed with great certainty in deciding upon the existence of organic lesion of the heart. See the "Memoir" by Roux, in the 3rd Vol. of the *Œuvres Chirurgicales*, of Desault; or an abstract of it in the 10th Vol. of the *New Medical and Physical Journal*. The Stethoscope will afford very important assistance in the formation of a correct diagnosis of these cases.

if powerful pressure upon the stomach upwards in the direction of the diaphragm, induce a feeling of distress and suffocation;—if, on the application of the stethoscope, the well-known "bellows-sound," or a confused tumultous throbbing be heard;—if repeated hemorrhage have occurred from the lungs;—and, more than all, if regurgitation of blood in the internal and external jugular veins,* be constantly observed, the existence of organic lesion of the heart can no longer be doubted. And, however successful be the efforts of medicine in removing its consequences, the cause still existing, those consequences will most assuredly recur; and the patient, as before stated, die in a manner commonly sudden; and mysterious to those who have not clearly understood the nature of the morbid process, and foreseen its inevitable result. In numerous instances of diagnosis cautiously founded on

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* The phenomenon of undulation or rather of "alternate turgescence and collapse" of the *external* jugular vein, was first pointed out, in 1819, by the present writer. See *Medical Repository*, Vol. XII, p. 229. It is a diagnostic mark of great value but most unfavourable import, in cases of dropsy; as invariably indicating the existence of dilatation, or other permanent obstruction to the venous circulation, in the pulmonary cavities of the heart. In every instance where it has yet been observed by the writer, the dropsical effusion, however successfully treated at first, has ultimately re-appeared. He, last September, examined the body of a dropsical female, in whom this external jugular undulation had long existed. The heart, *particularly its right cavities*, was enormously enlarged; the mitral and aortic valves cartilaginous; the aorta dilated at its origin, and contracted beyond its curve; a large quantity of serum in the chest and abdomen; the liver greatly congested. Extravasation of blood in the brain is a frequent consequence of hypertrophy of the heart. On this subject, see a most luminous Memoir, by Bricheteau; translated from the *Journal Complémentaire du Dictionaire des Sciences Médicales*, in the *Medical Repository*, Vol. XIII, p. 427.

the preceding data, the writer does not recollect the commission of an error.

In many subjects who have passed the meridian of life, and particularly in those of anxious or ardent mind, and gouty or rheumatic habit, the action of the heart is instantaneously suspended on the occurrence of any powerful effort or emotion whereby the circulation of blood through the cavities of the organ has been accelerated. An overwhelming apprehension of death is, at the same moment, experienced: and life is sometimes extinguished in the paroxysm. When the mind and body are perfectly quiescent or only moderately excited, nothing is felt except obscure pain about the insertion of the deltoid muscle of the left arm, occasionally striking across the breast; and flatulence of the stomach. The pulse is regular; the bowels generally torpid: and there is sometimes slight swelling of the ancles at night; probably arising, at least in part, from disuse of the wonted exercise.

To this affection, pathologists have given the expressive but unprecise designation, *Angina Pectoris:**

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* The *Syncope Anginosa* or *Angens*, of some British writers; the *Sternalgia*, and *Stenocardie*, of the French; the *Stenocardia*, of the Italians; and the *Brustbräune*, of the Germans. It was first noticed in England by Dr. Heberden in 1768; and has since been ably discussed by Dr. Parry, in his *Inquiry*, London, 1799; Dr. Jenner; and Mr. Allan Burns.—The most complete Monograph on the Subject is by Jurine, of Geneva, *Memoire sur l' Angine de Poitrine*, 8vo. Paris, 1815. He regards it as "a peculiar affection of the nerves of the lungs;" and all the lesions to which the disease has hitherto been ascribed, as accidental complications

and, like many other equally sonorous but more unmeaning names, it has been seized upon by the drones of the medical profession, as a most convenient title wherewith to invest any or every obscure affection of the heart, or ought resembling one, which they may chance to meet with. Even among scientific men, the term is frequently applied without the requisite precision: and confusion has been the result.

Upon the dissection of persons who have died in a paroxysm of this formidable complaint, the coronary arteries,—two vessels which supply the heart itself with blood,—have usually been found ossified; sometimes perfectly converted into bony cylinders: and hence, it has been more speciously than logically inferred that the symptoms which characterize Angina Pectoris, are essentially connected with ossification of the coronary arteries of the heart. Mr. Allan Burns' explanation of the mode in which diminution of the calibre of these vessels may induce the peculiar phenomena of Angina, is exceedingly plausible, and probably correct.*

By other writers, of equal authority and experi-

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or consequences of this "morbific disposition." His treatment consists of tonics, antispasmodics, and the *inhalation of oxygen gas.* The facts which Jurine's Work contains, are, nevertheless, numerous and valuable.

* The heart with its coronary vessels cartilaginous or ossified, is nearly in the condition of a limb girt with a moderately tight ligature: it can discharge its functions only so long as its action is moderate and equal.—When, therefore, the coronary arteries are ossified, every agent capable of increasing the action of the heart, such as exercise, passion, and ardent spirits, must be a source of danger. *Observations*, p. 138—139.

ence, it is contended that Angina Pectoris is an affection not exclusively and invariably dependent on ossification of the coronary arteries, but common to other varieties of lesion, of the heart, and even to diseases of the lungs and abdominal viscera. These apparent incongruities, it may not be impossible to explain and reconcile.

The phenomena which constitute Angina Pectoris in its simple form, are generally connected with ossification of the coronary arteries. But they may also arise from large accumulation of fat around the heart, or from *incipient* dilatation, or hypertrophy, of the organ with narrowing of the aperture of communication between its cavities.* In all these cases, circulation will go on quietly when the heart is not unduly excited by passion or exercise; and little inconveni-

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* A very *corpulent* gentleman, of *gouty* habit, past the middle age, has lately consulted the writer. His expression invariably is "I should be quite well if I could always sit perfectly still." On moving about a little more quickly then usual, he is instantly seized with pain in the region of the heart, shortness of respiration, and faintness; and compelled to suspend his progress. He has been relieved by spare diet, the internal use of Iodine and Cantharides, and the external application of antimonial ointment; a plan which has somewhat *reduced his excessive load of fat*.—An elderly gentleman, with all the symptoms of Angina Pectoris exquisitely marked, was some time since examined by the writer. The *chest*, in the region of the heart, *sounded very obscurely;* the *pulsation* of the organ was far more widely *extended* than in the natural state; the *bellows-sound* most distinctly *audible* through the stethoscope: the ancles slightly swollen. The countenance was anxious. The bowels were torpid. The patient suffered much from flatulence. He has been signally relieved by a plain diet; the interdiction of pedestrian exercise; ammonia; and a mild aperient. That the "Angina," in both these cases, is clearly explicable without reference to ossification of the coronary arteries, it will scarcely be requisite to insist.

ence will consequently be felt while the mind and body are at rest. This then is *simple Angina*. It may be *distinguished* by the regularity of the pulse and respiration, in a state of repose. It may *terminate* fatally under the influence of mental or bodily agitation; but more frequently proceeds to the assumption of a complicated form.

Complicated Angina is *distinguishable* from the preceding by the constant irregularity of pulse, or difficulty of breathing with cough, and decided indications of a dropsical tendency. There is always connected with it, congestion of the lungs; frequently, enlargement of the liver. If ossification of the coronary arteries, or large deposition of fat, were the original cause of the symptoms; induration of the valves, or other lesion of the heart has subsequently taken place: or the slight dilatation with contraction of the orifices, which at first determined the characters of simple Angina, has since acquired a more formidable extent. Sudden death by syncope, or by effusion of blood into the brain, or of serum into the cavities of the chest, is the ordinary termination of complicated Angina.*

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* The celebrated John Hunter died suddenly in a fit of mental agitation. On dissection, not only the coronary arteries, but the aortic and mitral valves were found ossified; and the ascending aorta in a state of incipient dilatation. See the "Life" of this great Surgeon, prefixed, by Sir Everard Home, to his *Treatise on the Blood*, 4to. London, 1794. An interesting case of complicated Angina with "Observations" is given by Dr. James Johnson, in the *Medico-Chirurgical Journal*, Vol. III, p. 101; and another by Dr. Palmer, with an illustration of the disease in its perfectly simple form, and a detail of the treatment, in The *New*

But all the morbid signs which characterize Angina Pectoris, are sometimes observed where, as the event clearly proves, no change of structure has occurred in the heart or its nutrient vessels. The diagnosis, in these cases, is frequently most obscure and difficult. The deranged action of the heart probably results from the mechanical pressure of an enlarged and loaded liver upon the diaphragm, and consequent diminution of the capacity of the chest; or from the influence of a morbid state of the stomach or colon. The result of medical Treatment constitutes the only unerring mean of discriminating this *Spurious** from the complicated Angina.

Angina Pectoris, in its simple and complicated forms, is obviously incurable. The *Palliative Treatment* of the *Former* consists in the utmost practicable abstraction of the patient from the influence of all those causes, moral and physical, which may disturb or hurry the circulation of blood;—in the prevention of intestinal fulness or flatulence by a simple, sparing, unacescent diet, the occasional administration of alkalis, particularly ammonia, and regulation of the bow-

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Medical and Physical Journal, Vol. VIII, p. 435. Mr. Allan Burns deprecates the administration of stimulants, and recommends blood-letting, in the paroxysm of Angina Pectoris.

* The author is far from thinking that all the affections now described, can be consistently grouped together under the generic title, *Angina*. It would be an arrangement little less motley and objectionable than the "unfortunate Mimoses" of Dr. Hall. Still, if there needs must be such a genus of thoracic diseases as Angina, it surely behoves the practitioner, as well for his own credit, as for the wel-

els by an aloetic aperient; and the institution of a purulent drain in the region of the heart.—Where the inordinate *accumulation of fat* is suspected, a more rigorous plan of diet with Iodine, Cantharis, and other agents which exert a powerful influence upon the absorbent system, may be productive of temporary benefit.

Foxglove and Squill combined with small doses of Quicksilver, Gamboge, and other diuretics, will, by obviating serous effusion, palliate the sufferings, and prolong the existence, of the patient in *complicated* Angina. The remedies specified in the preceding paragraph, may be conjoined with them, or variously modified according to the peculiar characters and circumstances of the disease.

Measures which have for the object the reduction of enlargement of the liver, and the restoration of its healthy functions,—as Abstinence, local Blood-letting, Blistering, Mercurials, the Dandelion;*—or the removal of a disordered state of the stomach and colon, —animal Diet, mild Aperients, Alkalis, Tonics, ex-

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fare of his patients, to discriminate the curable from the incurable cases: and the preceding arrangement, however defective in principle, will with this view be found useful in practice.

* A stout middle-aged tradesman, of intemperate habits, was invariably seized with "stoppage of the heart" and faintness, whenever he walked up hill, or his "mind was ruffled." He had severe pain in both arms. The case was sent to the writer as one of pure Angina Pectoris. On close examination, however, the liver was found enlarged; and the circulation, even in a quiescent state of mind and body, hurried and irregular. Hence it was suspected to come under the description of Spurious Angina: and, consistently with this opinion, all the symptoms permanently yielded to the treatment specified in the text.

ercise, and the novelties and distractions of a migratory life,—are peculiarly indicated in, and will most effectually dissipate the distressing symptoms of, *Spurious* Angina.

The passions of the mind constitute a frequent source of diseases of the heart. Thus, Corvisart has observed that they were extraordinarily prevalent in France during the tempestuous period of her memorable revolution. Yet exposure to atmospheric vicissitudes, and inordinate muscular exertion, are causes to which they may still more frequently be traced. The common occurrence of these affections in the agricultural poor, and in that most abused and laborious of all domestic animals, the Horse,* familiarly illustrates this assertion.

Violent palpitations or other irregular actions of the heart sometimes result from disorder of the intestinal canal, especially the colon; from congestion of the brain; or, still more frequently, from a complicated affection of both.† The derangement of the heart,

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* Few horses attain an advanced age without exhibiting, on dissection, traces of diseased heart. The high temperature of the stables in which they are confined, and the respiration of an atmosphere loaded with ammonia, doubtless, concur with their inordinate exertions of the muscular system, in the production of these consequences: the former, by the operation of sudden cold, to which it necessarily exposes them; the latter, by incessant irritation of the bronchial membrane. Hence the importance of a well-ventilated stable to the health and longevity of the horse.

† So closely does derangement of the heart from its sympathy with the colon sometimes simulate organic disease, that the celebrated Corvisart, himself, has been betrayed into the formation of an incorrect diagnosis. See *Medico-Chirurgical Journal*, Vol. IV, p. 145. Palpitations of the heart, very difficultly distinguishable from the irregularities connected with change of structure, are fre-

in these instances, exhibits a character which can be distinguished by the minutely observant and experienced eye alone, from morbid alteration of the vessels, valves, or substance of the organ: and only remedied by treatment sedulously directed to the original source of morbid action. To discriminate, therefore, merely simulated from actual diseases of the heart, is a most delicate and momentous point of medical practice. For it cannot be too deeply impressed upon the public and professional mind, that simply irritative or deranged action, often curable with facility, will, if long established in an important organ, ultimately terminate in fixed and irremediable change of structure.*

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quently dependent on spinal irritation. Several such cases have been observed by the writer. There is generally intolerance of pressure, or a sense of soreness, about the summit of the dorsal portion of the spine. The treatment consists in the application of a blister or antimonial plaster between the shoulder-blades, vegetable tonics, ammonia, mild aperients, and invigorating exercise.

* The following is a list of the principal works which may be perused with advantage on the pathology of the Heart:—Senac, *Traité de la Structure du Cœur, de son Action, et de ses Maladies*, 2 Vol. 4to. Paris, 1777;—Burns, *Observations on some of the more frequent and important diseases of the Heart*, 8vo. Edinburgh, 1809;—Testa, *Delle Malattie del Cuore, loro Cagioni, Specie, Signe, e Cura*, 3 Vol. 8vo. Napoli, 1810;—Corvisart, *Essai sur les Maladies et les Lésions organiques du Cœur*, &c. 8vo. Paris, 1811, *Translated* by Mr. Hebb, of Worcester;—Farre, *Pathological Researches on Malformations of the Human Heart*, 8vo. London, 1814;—Kreysig, *Die Krankheiten des Herzens*, 3 Vols. 8vo. Berlin, 1814—17;—and Bertin, *Traité des Maladies du Cœur*, 8vo. Paris, 1824. The first, second, fourth, and fifth works are too well known to require eulogium. That of the *Italian* pathologist is a meagre production, although probably much improved in the edition of 1826, which the writer has not yet seen. The *German* volumes contain many important facts; but are greatly deteriorated in their interest and value, by an insufferably prolix and prosing style. The precise information and luminous views, exhibited by *Bertin's Treatise*, amply entitle it to the honour of a good English Translation.

CHAPTER X.

OF EXTERNAL INJURIES,—CONSIDERED AS THE EXCITING CAUSES OF DISEASE.

INJURIES applied to the exterior of the animal body are of two kinds, mechanical and chemical. Without entering into any minute examination of their varieties of character and modes of operation, it is here merely intended to shew that injuries of either kind, when so violently or extensively inflicted as to induce general derangement of the system, usually operate, not by a direct sympathy of the stomach with the wounded part or member, but by their indirect influence upon the intestinal canal, heart, and other important organs, through the medium of the brain and spinal marrow.

For the purposes of illustration, Tetanus, or locked-jaw, and the various modes in which life is destroyed by deprivation of atmospheric air;—burns and scalds,—may be most aptly selected. The former belong to the *mechanical;*—the two latter, to the *chemical*—division of injuries.

Tetanus, like Tic douloureux, admits of discrimination into two species,—the idiopathic or constitutional; and the vulnerary or local. The *Idiopathic* results from a constitutional;—the *Vulnerary* or *Trauma-*

tic as it is also designated in professional language, from a local cause. The latter more frequently follows the infliction of a punctured, lacerated, or contused, than of an incised wound: and will constitute the exclusive subject of the succeeding observations.

Great diversity of opinion has long existed among pathologists, respecting the precise seat and character of the morbid action essentially connected with Tetanus; and the causes of its almost invariably fatal termination. Until within the last few years, the results of dissection, in this formidable disease, have been exceedingly discordant and unsatisfactory; and the inferences deduced from them, necessarily vaccillating and confused. The source of all this incertitude is, at length, as obvious as its consequences were heretofore perplexing. The state of every important organ more readily accessible to the scalpel of the anatomist has, in exploring the pathology of Tetanus, been submitted to rigorous examination: while that of the spinal marrow, which cannot be investigated without considerable difficulty and labour, has been unfortunately neglected. Few facts in morbid anatomy are now more clearly established than that Tetanus essentially consists in inflammation of the spinal chord, propagated to it, in the vulnerary species, by the irritated nerves,* from the wound; and that the vestiges of congestive or inflammatory action which

* In some cases, inflammation is said to have been distinctly traced along the whole track of the nerve from the seat of injury to its origin in the spinal chord.

have been so commonly exhibited by the lungs or intestinal canal, on the dissection of tetanic subjects, are mere adventitious complications of the disease; or effects resulting, like the similar morbid phenomena observed in Hydrophobia, from reflected spinal irritation.

On this important subject, an overwhelming mass of evidence might readily be accumulated. The writer will, however, content himself with adverting to a few facts in the works of British and Continental authors;* which, while they serve to establish his own views, may, it is hoped, attract the notice of, and stimulate to increased exertion, those who are favourably circumstanced for observation, in the interesting field of spinal pathology; and expose the strong affinity which connects Tetanus with Hydrophobia, more closely even in their nature and origin, than in their external characters.

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* See a most valuable and luminously written "Case of Tetanus," illustrated by an Engraving. By Mr. T. Brayne, of Banbury. *London Medical Repository*, Vol. XIV, p. 1;—a "Case of Traumatic Tetanus," examined by Mr. Macmurdo, *Lancet*, March 29, 1828;—and two Cases by Frank, *Bulletin de la Société Médicale d'Emulation*, July 1818, or *Medical Repository*, Vol. XI, p. 67. A "Case of (Idiopathic) Tetanus, with Inflammation of the Spinal Chord and Disease of the anterior roots of the Spinal Nerves," is communicated in the *Lancet*, for November 1, 1828; and another, which may be inferred, from the absence of all mention of a traumatic origin, to be idiopathic, cursorily mentioned, as having been observed by Dr. Freer, of Leicester, in an excellent paper on Spinal Affections, by Dr. Walker, of Cambridge. *Medical Repository*, Vol. XIV, p. 192.

But the most important work on this subject, is an Italian Monograph, by Dr. Bergamaschi, *Sulla Mieletide Stenica, e sul Tetano*, 12mo. Pavia, 1820; in which the "Identity" of Tetanus with Inflammation of the Spinal marrow appears to be incontrovertibly established. It is illustrated by the dissection of nine fatal cases; and may be recommended as a very interesting production.

The *Treatment* of vulnerary Tetanus, like that of Neuralgia, may be either local or constitutional. And the principle of the *former* is the same in both affections,—that of cutting off the communication between the seat of injury and the cerebral mass.* In Tetanus, however, this treatment is exclusively applicable to the period which precedes the full development of the symptoms; and the object may be effected by amputation of the wounded member, or by division of the nerve as in Neuralgia. To the success of these operations promptly performed, in arresting the progress of vulnerary Tetanus, the celebrated French Army-Surgeon, Larrey,† has borne decided testimony. But if it be postponed until the irritative action has been propagated to the origin of the nerve and spinal inflammation has consequently commenced, removal of the wounded limb, or division of its nerves, will obviously be unavailing or rather aggravate the mischief. An inattention to this momentous point of practice has probably led to erroneous conclusions on the inutility, and unqualified rejection, of both these operations in traumatic Tetanus.

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* See, on this point of practice, Cooper's excellent *Surgical Dictionary*, p. 1058 of the *Fifth Edition*. How striking the affinity thus shewn to exist between vulnerary Neuralgia and Tetanus, and Epilepsy from local irritation.

† *Mémoires de Chirurgie Militaire*, T. IV, p. 168. The practice, however, should be restricted to *incipient* cases of Tetanus, or to accidents which, if unaccompanied by Tetanus, would require amputation. If division of the nerve be preferred, it "should be practised before inflammation has come on;" or it will be "useless and even dangerous." *Cooper's Dictionary*, p. 1058.

Little will require to be said, if the preceding views be correct, on the *Constitutional Treatment* of the disease. The hints cursorily thrown out for the improvement of the practice in Hydrophobia, will be peculiarly applicable to this almost equally formidable and fatal affection. Abstraction of blood from the whole track of the spine, sometimes preceded by general blood-letting; extensive blistering; Opium, or the Hydro-cyanic Acid, with Mercury in internal employment, are the remedies upon which the principal reliance should be placed. From the curious fact heretofore stated,* it is not unreasonable to infer that the application of a blister, or other active counter-irritant, along the whole spine may, while subduing the inflammatory state which constitutes the essential character of the disease, exert some influence in dissipating the intestinal torpor by which it is as constantly aggravated as attended.

Persons are frequently destroyed at the moment of infliction of external violence, from which the organs have sustained no injury capable of explaining the fatal event;—or during the performance of a surgical operation, where nothing like fatal hemorrhage has taken place. In these mysterious cases, life is probably extinguished by the sudden shock inflicted upon the brain and spinal marrow.†

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* See Note * p. 347.

† A healthy young woman was stricken on the head by a few small shots from a fowling-piece, levelled at her from a considerable distance. She uttered a shriek and instantly fell dead. None of the shots were found to have perforated the

Again, when severe or dangerous constitutional symptoms arise in compound fracture or dislocation of a bone, these symptoms invariably assume, more or less, the character of typhus, accompanied by delirium and great agitation of the nervous system; and require with slight modifications, the same method of treatment. The intimate connection of typhoid fevers with inflammation of the membranes of the brain, has heretofore been noticed.*

In the treatment of persons who are suffering under the direct consequences of violent injury, a fatal error is sometimes committed; which it is here requisite to expose. A man stunned by a blow upon the head, or crushed by a carriage-wheel, is found lying cold and senseless. Scarcely a vestige of animation can be discerned. Life, according to the popular opinion, can only, under these circumstances, be preserved by instant blood-letting: and unless the surgeon who first reaches the scene of accident, possess with en-

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skull.—A middle-aged man suddenly expired in a few minutes after amputation of the foot for a scrofulous affection of the ancle; which he had sustained with extraordinary courage. Four ounces of blood had not been lost during the operation. All the internal organs were found, on dissection, in a natural state. But to satisfy the minds of those who witnessed the operation, and repress the murmurs of the man's friends, it was thought proper to give in a report that he had died from a sudden "*Collapse of the Lungs.*"

* See pages 152, and 209. An interesting case of Inflammation of the membranes of the brain, assuming, towards its fatal close, all the characters of genuine Typhus, has been observed by the writer since those pages were committed to the press. It occurred, in a middle-aged invalid, from the spectacle of an appaling accident, in which he was not personally interested; and constitutes a striking instance of the production of cerebral disease by the operation of a moral cause.

lightened views, an unbending spirit, the safety of his patient may be sacrificed to the popular clamour. In this depressed state of the circulation, the feeble powers of life will sometimes be extinguished by even a slight blood-letting. The patient should be conveyed to a warm bed; and a dose of ammonia or warm diluted spirit be administered. Thus stimulated, the system will, in a short time, recover from the immediate consequences of the shock; the heart be aroused from its temporary torpor. Re-action will commence. This is the signal for depletion,—the period when the fatal results of inflammation may be averted by its active employment.

Respecting the precise mode in which Animal Life is destroyed by Exclusion of the Atmospheric Air from the Lungs, great difference of opinion formerly prevailed among physiologists. It is now, however, generally acknowledged that death takes place because blood which has not been exposed to the vivifying influence of the external air in the pulmonary vessels, is incapable of sustaining the functions of the nervous system;—in other words, that, as the brain can no longer be stimulated by venous blood, the functions of all the dependent organs are necessarily suspended. These consequences may be induced by any agent interposed so completely between the external atmosphere and the glottis or aperture of the windpipe, as to obstruct the admission of the former into the lungs. In the human subject, it is usually produced either by suffocation or strangulation.

Suffocation includes death by the pressure of a crowd, the fall of loose earth or of building; and submersion under water, or drowning. In the *former*, mechanical injury is commonly superadded to the agent obstructing respiration. *Submersion*, as rarely attended with the infliction of violence, constitutes the most simple, and probably the easiest, mode of deprivation of life. The introduction of a quantity of water into the lungs and stomach is not essential, as some writers have asserted, to the production of the fatal result in drowning; nor is it invariably observed in animals destroyed by submersion. When existing, it probably takes place in the convulsive efforts of the last struggle; and will, in proportion to the quantity of fluid which has been introduced, obviously aggravate the difficulties of resuscitation. But it is a circumstance which has, perhaps, excited more discussion than its importance merits; and given rise to practices and suggestions for the recovery of the drowned, not less preposterous than baneful or unavailing.* Into the lungs or stomach of a person, whose body has been thrown into water after death, none of the fluid can find its way.

Strangulation may be effected in two modes,—by

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* As holding up the body by the heels with the view of facilitating the escape of the water from the lungs. Thus, also, the employment of the stomach-pump has been strongly recommended by a sagacious writer in one of the public journals, as peculiarly applicable to the resuscitation of drowned persons. The introduction of water into the *stomach* is consequently, in *his* opinion, the principal cause of death from submersion.

the application of a cord, or other bandage drawn tightly around the neck, or even by the continued grasp of a powerful hand; and by suspension or hanging. In either of these modes, the process is less simple than mere suffocation: since death must be partly determined by congestion of the brain resulting from the pressure exercised by the bandage or the hand, on the jugular veins. Thus the brain suffers in a two-fold degree, from strangulation. Frequently, indeed, the mechanical violence inflicted in the act of suspension, is so great as to destroy life without the aid of the more ordinary causes: for if the suspended person be of great weight or a plethoric habit, or his fall have been considerable, the shock may be such as to rupture a blood-vessel in the brain, or dislocate one of the vertebræ of the neck. The process of suspension, cautiously and expertly conducted, extinguishes life with great rapidity and little pain. But the spectacles of suffering and horror which occur in this country, from the negligence or blundering of the public executioner, are so frequent as to call forth the sympathy and indignation of every feeling mind; and suggest the anxious wish that some more unerring instrument of death might be employed as a substitute for the halter. The privilege which one human being possesses of inflicting death upon another, except in self-defence, involves a question which it becomes not the writer upon medicine to discuss. Upon the policy and decorum of public executions, and the influence which they exert on the minds of the popu-

lace and the criminal,—a diversity of opinion may exist. But who shall dare to deny that the punishment of death ought not to be aggravated by one moment's unnecessary torture; and that every attempt to improve the instrument, and expedite the process, should excite the deepest interest and solicitude of an enlightened government; as an object not less of justice than of mercy to the unhappy culprit?*

The *Treatment* of suspended animation from exclusion of the atmospheric air, rests either on general principles, or on the adoption of particular means indicated by a consideration of the precise mode whereby the accident has been produced. Hence, it may be distinguished into the general and the peculiar.

The *General Treatment* consists in the prompt removal of the body to a warm bed, with the head slightly elevated, or immersion in a warm bath; active friction with hot flannels and diverse stimulating

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* Decapitation is, on the principle explained at p. 17 of this work, the most instantaneous mode of destroying life. But it should never be intrusted to the human hand. The silent but affecting appeal of the unfortunate Duke of Monmouth to his unsteady executioner dreadfully illustrates this position. A well-constructed guillotine—so called from its inventor, Dr. Guillotin, of Lyons—forms the best, because the most certain, instrument of death. The accomplished Cabanis, in refuting the errors which prevailed respecting the pains of decapitation by the guillotine, objects to its employment *because the effect is too rapid and not sufficiently imposing*. "The head disappears; the body is huddled into a basket. The spectators see nothing: for them, it is no tragedy. They have no time to be affected." See the *Note*, on this subject, in Cabani's work *Du Degré de Certitude*, &c. p. 321. The cheek of the intrepid Charlotte Corday is said to have reddened, as though moved with indignation, on being wantonly smitten by the executioner after decapitation. This assertion, with the physiological inferences drawn from it, is, however, positively contradicted by Cabanis.

remedies, the application of sinapisms, heated bricks, or bladders of hot water, to the pit of the stomach and extremities:—irritation of the nostrils by smelling-salts, liquid ammonia, aromatic vinegar or snuff: excitation of the dormant brain and heart by galvanism; of the lungs by inflation with a pair of bellows, or, as is far preferable, the introduction of an elastic gum tube through the aperture of the glottis, or an artificial opening into the windpipe;—of the intestinal canal by the injection of stimulants into the rectum, and the cautious introduction of warm wine or spirit and water into the stomach.* Blood-letting is not generally indicated: emetics, and tobacco-injections† are decidedly prejudicial.

In apparent death from *drowning*, the chances of resuscitation are obviously greater than in suspended animation from causes necessarily complicated with mechanical violence. Hence, in all these cases, the means of recovery, especially the employment of warmth, friction, inflation of the lungs, and galvanism, should be most sedulously continued until hope is utterly extinct. Suspension of the body by the heels,

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* Dr. Male, whose opinion on these subjects is entitled to the utmost respect, says "that nothing should be poured down the throat till the patient can swallow." At all events, to obviate the dangers of its passage into the glottis, no fluid should be administered except through an elastic gum tube introduced into the gullet.

† "Tobacco, either in form of smoke or infusion, should never be used, as it has a narcotic effect, and tends to destroy the irritability of the muscular fibre," Dr. Male's *Elements*, p. 198.

and all the other rude methods of resuscitation, "sometimes practised by the vulgar, are more likely to destroy life than to restore it." The same remarks will apply to cases of suffocation from *pressure*,* unaccompanied by the infliction of severe mechanical injury.

In both varieties of *Strangulation*, when the patient is of a plethoric habit, or the signs of cerebral congestion are strongly marked, blood may be drawn, with obvious advantage, from the temporal artery or external jugular vein. To these cases, the operation of tracheotomy, and the stimulant powers of galvanism,† are peculiarly applicable.

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* Of the 32 persons suffocated by the pressure of the crowd assembled before Newgate, at the execution of Haggarty and Holloway, on Monday the 23rd of February, 1807, not one exhibited either fracture of a bone or other visible mark of external injury. Yet, in no instance, were the efforts at resuscitation, although vigorous and long-continued, successful. The operation of tracheotomy was tried in two of the most promising cases.

† For an account of the extraordinary effects of Galvanism on the body of an executed criminal, by Dr. Ure, see the 12th Vol. of The *Journal of Science and the Arts*, p. 283.—The subjects of Submersion and Strangulation are copiously discussed in the following works:—Mahon, *Médecine Légale*, 3 vols. 8vo. Paris, 1811;—Foderé, *Traité de Médecine Légale*, 6 vols. 8vo. Paris, 1813—a learned and elaborate but diffuse and heavy production;—Male, *Elements of Juridical or Forensic Medicine*, 2nd. Edition, 8vo. London, 1818,—an excellent popular Treatise;—*Orfila, Secours a donner aux Personnes empoisonnées ou asphyxiées*, 12mo. Paris, 1818,—a good manual for the student;—Smith, *Principles of Forensic Medicine*, 8vo. London, 1821;—Paris and Fonblanque, *Medical Jurisprudence*, 3 Vols. 8vo. London, 1823;—Beck, *Elements of Medical Jurisprudence*, 8vo. (see Note * p. 110);—Martini, *Introduzione alla Medicina Legale*, 3 vols. Torino, 1825,—a work in which the *principles* of the Science are discussed with great profundity and learning;—and Orfila, *Leçons*, (before noticed) 3 Vols. 8vo. Paris, 1828,—an admirable production.

The nature and phenomena of *Burns* and *Scalds* are too well-known to require particular description. The latter injury differs from the former merely in degree: for it is obvious that, by the agency of water, a temperature beyond 212° of Fahrenheit's scale, cannot be applied. In proportion to the extent of surface operated upon by the fire or boiling water, the functions of the skin will be suppressed; and an additional load consquently thrown on the exhalant vessels of the lungs. Sometimes the shock thus inflicted upon the brain and nervous system, is so severe as to destroy life ere re-action can take place. Mr. Abernethy relates an instance wherein a Surgeon was dragged before a jury on the unfounded charge of having accelerated, by the exhibition of two moderate doses of Opium, the dissolution of a child; which had evidently resulted from the violence of this shock.*

In no department of practical Surgery, has greater discrepancy of opinion existed than in the *Treatment* of Burns. To enumerate even the principal varieties which have been recommended, would be as tedious as uninstructive. A cursory notice of the two plans which constitute the opposite extremes of the whole series, will be sufficient here.

The *Cooling Plan* consists in the application of refrigerant lotions to the injured surface; the employ-

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* See page 71, of his *Lectures on Anatomy, Surgery, and Pathology*, 8vo. London, 1828.

ment of blood-letting, and other anti-inflammatory remedies. It has the effect of procuring an immediate, though transient respite from suffering. But when the injury is very extensive, cold cannot be adequately and constantly applied without great personal discomfort, and perilous derangement of the vital functions. If solutions of lead be employed in such case, the dangerous consequences may be aggravated by an absorption of the metallic poison.

Dr. Kentish is the author of the opposite treatment now to be discussed. He exposes the burnt or scalded parts to moderate heat from a fire; dresses them with heated alcohol or turpentine, and covers them afterwards with a stimulating ointment; puts the patient into a warm bed, and administers opiates and cordials. From this plan, which at first aggravates the pain, great relief is promptly obtained. The patient falls into a sleep; and the subsequent mischief is less extensive, and admits of more speedy reparation, than when the debilitating treatment has been pursued. Such, at least, are the conclusions which the writer has drawn from his limited experience on the subject. They are amply sustained by the powerful testimony of Mr. Abernethy. The application of simple poultices is, however, preferred by some very eminent Surgeons.

Another plan, more lately proposed, consists in dredging flour on the injured surfaces, and repeating the application once or twice a day until a perfect crust is formed. It evidently operates on the twofold

principle of excluding the atmospheric air, and absorbing the fluid secreted by the vessels of the inflamed surface. There are different opinions respecting its value. The writer is destitute of facts which might enable him to decide upon it.*

Although not strictly pertinent to the subject, a very valuable paper, on the effects of deglutition of boiling water, by Dr. Marshall Hall, may here be noticed. From the facts there stated, it may be inferred that the heated fluid does not invariably destroy life by its action on the gullet and stomach; that it commonly induces inflammation and tumefaction of the glottis,—in fact, a kind of Croup, or rather Laryngitis,—terminating in suffocation; and that the most effective remedy for this distressing accident is the operation of Tracheotomy.†

In the Appendix to Dr. Hall's paper, there is a communication by Mr. Gillman; describing an instance in which death ensued from complicated inflammation of the superior part of the gullet and windpipe, induced by the attempt to swallow boiling water: and

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* See, on Burns and Scalds, Kentish, two *Essays on Burns*—the first published in 1798;—Pearson, *Principles of Surgery*, 8vo. London, 1808;—Larrey, *Mémoires de Chirurgie Militaire*, T. I, Paris, 1812;—Thomson, *Lectures on Inflammation*, 8vo. Edinburgh, 1813;—Abernethy, *Lectures*, just cited;—and the Article, *Burns*, in Cooper's *Surgical Dictionary*.

† See *Medico-Chirurgical Transactions*, Vol. XII, p. 1. Local or general blood-letting is clearly indicated in these cases; and Dr. Hall very judiciously suggests "the scarification of the epiglottis and glottis so as to evacuate the blisters" which must greatly aggravate the impediment to respiration.

another, by Mr. Stanley; wherein the fatal result was apparently determined, not by the infliction of injury upon the respiratory passages, but by a consequent affection of the brain.

This volume, of the imperfections of which no one can be more deeply sensible than the writer, may not be inaptly closed by a few general remarks on the physical and moral management of the sick. The *physical* will principally apply to acute diseases.

In the commencement of all such diseases, repose, mental and corporeal, is a condition most favourable, if not essential, to recovery. The perfect relaxation from muscular exertion, afforded by the recumbent posture, and the silence of a retired bed-room, are hence peculiarly indicated: nor should they be disturbed, or broken in upon, by the distractions of business or the thoughtless intrusions of curious visitors. The room should be spacious and dry; its atmosphere be freed from all impurities by ventilation, and the prompt removal of every source of contamination; and regulated in temperature according to the nature of the patient's case. In all affections of the brain, or diseases complicated with cerebral disturbance, light and sound should be sedulously excluded:—the air, in small pox, and all fevers of typhoid character, be cool and frequently renewed. In active pulmonary hemorrhage* or inflammation, a warm atmosphere, free from

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* Great mischief almost invariably results from the operation of a cold at-

smoke or other aërial impurity, will exercise a very genial influence: and all effort in speaking* should be strictly prohibited.

Abstinence is one of the most important agents which the physician can employ, not only in the early stage of acute diseases, but in many of the chronic affections resulting from them. It operates on the vascular system both by the reduction of the volume of the circulating fluid, and the removal of that powerful stimulus to the heart's action which repletion of the stomach with strong viands notoriously supplies. If, on the first attack of fever or inflammation, the patient retire to his bed, and firmly resist the introduction into his stomach, of every thing but water or some mild vegetable infusion, many a violent and otherwise fatal illness may at once be arrested. Instinct invariably prompts the lower animals, when attacked with sickness, to refuse food. Loss of appetite, under these circumstances, may be regarded as a signal

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mosphere on the lungs, or from the application of cold lotions to the chest, in pulmonary hemorrhage. By irritating the mucous membrane of the bronchia, or repelling the blood from the surface to the interior, they aggravate, rather than repress, the hemorrhagic action of the vessels; which a genial temperature will sooth and mitigate. On this obvious principle of soothing irritation, Mr. John Hunter prescribed, with success, the internal use of hot water in a case of hemorrhage from the stomach which all the boasted styptic and astringent rememedies had failed to arrest. Thus, also, bleeding from the nose which has obstinately resisted the employment of cold, will frequently yield to sponging with warm water.

* Silence is a more important mean than is generally supposed, in the treatment of pulmonary diseases. Even in debility of the system from other causes, frequent or long-continued exertion of the organs of speech is a most exhausting process.

that the system stands in need of no immediate supply;—that the stomach is no longer in a state to receive or convert alimentary substances. It is a prohibition which the prudent will always respect with advantage;—which the thoughtless or the sensual can never violate with impunity. In this, as in many other instances, Man may take a lesson of wisdom from those members of the creation, over which he is wont so arrogantly to assert, and so cruelly to abuse, his superiority and dominion.

The great difficulty in the treatment of acute diseases, is to determine the precise point to which depletion should be carried, and where suspended. If the employment of blood-letting, purgatives,* and other debilitating agents be pushed too far, the extinction of the disease will frequently be followed by that of life. And when, on the other hand, evacuant remedies and abstinence are not duly persevered in, the active state, imperfectly reduced, will degenerate into chronic inflammation, with all the fatal consequences of this insidious process. Many of the incurable lesions of the internal organs may be correctly attributed to this error.

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* Blistering should not generally be employed in acute diseases until the impetus of the circulation has been lowered by blood-letting or purgatives or both. Previously to this period, it will exasperate, rather than subdue, the internal irritation. In reducing increased action of the heart and arteries, a combination of Digitalis-powder with Oxymuriate of mercury will be found eminently successful. For a knowledge of the effect of this powerful sedative in inflammatory affections, the writer is indebted to Mr. Burgess, an active and intelligent general practitioner, and now Superintendent of an Asylum for the Insane, at Great Wigston, near Leicester.

The debility consequent on active diseases, and on the practice requisite for their suppression, is too often regarded by the professional attendant and the friends of the patient with unnecessary alarm: and the means employed to avert an imaginary, become the source of much positive, evil. If the system be once fully relieved from the burthen by which it has been oppressed, the process of reparation may, in general, be safely left to its own energies. Nor should it be forgotten that hunger, by stimulating the absorbents to increased action, will exert a most salutary influence in removing the consequences of active disorder, and preventing the congestive state of the vessels which may lay the foundation of chronic disease.*

Still not less important than the physical, is the *Moral Management* of the Sick† The Science of Medicine consists not more in the judicious application of physical remedies, than in a deep acquaintance with the constitution of the mind, and the ability to exercise a powerful control over the passions, the af-

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* In all severe cases of acute, and in many of chronic disease, *written* directions should be given on the subject of diet, temperature, and any other point which may be essential to the treatment of the complaint. This precaution will obviate the possibility of error or forgetfulness on the part of the patient or his attendants; and evince, while it cultivates, salutary habits of attention to minute circumstances, in the practitioner. From fifteen years' experience in the adoption of this method, the writer can affirm that it will amply compensate, by its results, for the time and labour expended on it.

† They who wish to study the reciprocal operation of Moral and Physical Agents on Man, are referred to the profound work of Cabanis, entitled: *Rapports du Physique et du Moral de l'Homme*, 2 Vols. 8vo. Paris, 1805.

fections, and the intellect, of Man. And he who is best calculated by a superior development or energy of brain, to inspire confidence, and secure an implicit submission to his dictates, in those around, will most successfully administer to their sufferings in the hour of danger and depression. By the influence acquired over the mind of his confiding patient, the sagacious Empiric will frequently obtain results in practice, which a knowledge of the human frame, its diseases, and their ordinary remedies, however comprehensive and profound, would never, unaided by such moral power, have enabled the most experienced physician to accomplish.

But with the possession of this power, even when improved by the higher attainments of Science, and sustained by inexhaustible energy and beneficence in their exercise, the professional character is still imperfect. To produce all the results of which these estimable qualifications are susceptible, they must be regulated and tempered by unwearied prudence and circumspection. Rashness in the delivery of medical opinions, and an affectation of extraordinary boldness and decision in practice, may impose upon the weak, and dazzle the ignorant, for awhile. But they are not more delusive and dangerous to the sick than eventually fatal to the professional eminence which may be erected upon them. For it cannot be too deeply impressed on the minds of all those who aspire to distinction in the Science of Medicine, that their reputation, and the rank which they shall ultimately as-

sume in the public opinion, will be determined not so much by their success in the treatment, as by the knowledge which they may exhibit in correctly determining the nature, and predicting the issue, of diseases.

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EXPLANATION

OF THE SCIENTIFIC TERMS UNAVOIDABLY EMPLOYED IN THIS WORK.

Abdomen, the belly: hence the adjective *abdominal*, relating to the belly.

Absorbents, minute vessels which drink up the *chyle* from the bowels, and fluids from every other part of the body, and convey them by one common trunk, *the thoracic duct*, into the blood. The intestinal absorbents are called *lacteals*;—the others, *lymphatics*.

Absorption, the process whereby particles of matter are taken up by the absorbent vessels.

Acarus, plural *Acari*, a tribe of animals formerly confounded with insects, and constituting, in the Linnean system, a genus of the Order, *Aptera*,—wingless:—breathing, like true insects, by *tracheæ*;—distinguishable from them by want of *antennæ* and *wings*. Now recognised as a distinct class in the *Annulata* division of the Animal Kingdom.

Acescency, the disposition to become acid: hence *acescent* food.

Acute, active, opposed to *chronic*, in its application to disease. Hence *acute* or inflammatory rheumatism.

Adipose, fatty.

Aëriform, see *gaseous*.

Alcohol, rectified Spirits of wine: adj. *alcoholic*, applied to fluids which contain it.

Alimentary, from *aliment*, food. Synonymous with *alvine* and *intestinal*, when applied to the *canal* of the bowels.

Aloetic, consisting of *aloes*, the inspissated juice of the *Aloe spicata*,—a well-known purgative.

Alvine, relating to *alvus* the belly. Thus the intestines constitute the *alvine* or *intestinal* canal.

Ammonia, volatile alkali, the base of smelling salts, and principal ingredient of Salvolatile. Hence the term *ammoniated*, applied to substances containing it.

Amphibia, the third class of animals which possess a spine: and first in the division of the cold-blooded. By later naturalists, formed into four orders; of which the snake, tortoise, lizard, and frog, may be given as familiar types:—*Amphibious*, relating to these animals.

Anasarca, general dropsy: adj. *anasarcous*.

Aneurism, enlargement of an artery by rupture or dilatation of its coats: adj. *aneurismal*.

Angina, a genus of inflammatory diseases affecting the throat: see *Cynanche*.—A term improperly applied to some morbid conditions of the heart. See p. 356: adj. *anginose*.

Anile, relating to old women.

Antimony, a metal, the base of emetic tartar: *antimonial* powder (an imitation of the celebrated James' powder), and other valuable medicinal agents.

Antiphlogistic, anti-inflammatory: Remedies employed to subdue inflammation, are so designated.

Antispasmodic, a remedy against spasm.

Aorta, the large artery rising from the left—hence called the *aortic*—ventricle of the heart, and conveying blood for distribution to the whole body.

Aphonia, loss of voice.

Apoplexy, a disease resulting from fulness or effusion of blood in the brain or spinal canal; and thus distinguished into *cerebral* and *spinal apoplexy:* adj. *apoplectic.*

Apparatus, a system of organs.

Aqueous, watery.

Artery, a vessel arising directly or indirectly from the *aorta*, and carrying renovated or *arterial* blood. Arteries are the seat of that peculiar phenomenon, the pulse.*

Arterialization, the process by which the venous is converted, in the lungs, into *arterial* blood.

Ascaris, plural *ascarides*, a genus of intestinal worms; of which, two species, the large round, and the thread-worm, exist in man. By some naturalists, the latter is removed into a different genus, *Oxyuris*. See Rhind's *Treatise*, p. 44.

Ascites, Dropsy of the belly.

Asphyxia, cessation of the pulse,—suspended animation: *asphyxiated*,—in a state of apparent death.

Asthenia, privation of strength: hence, *asthenic* disease signifies disease from debility.

Atony, loss of tone or energy: adj. *atonic.*

Atrophy, defect of nutrition.

Auricle, see *Ventricle.*

Azote, nitrogen,—a constituent of atmospheric air: adj. *azotic.*

Bile, the gall, a fluid secreted by the liver, and poured by the *biliary* duct, with the fluid of the *pancreas*, into the *duodenum*: adj. *bilious*, abounding with *bile.*

Biliary concretion or *calculus*, a gall-stone.

Bronchia, tubes forming a continuation of the windpipe, and conveying air from it into the cells of the lungs: adj. *bronchial.*

Bronchitis, inflammation of the *bronchial* membrane.

Bronchotomy, an impracticable operation. See p. 289.

Capillary, a term signifying hair-like, and applied to the minute extremities of vessels.

Carbonic acid gas, fixed air: *carburetted*, combined with *carbon* in various proportions.

Carbuncle, a boil of malignant character, which terminates by sloughing.

Carditis, inflammation of the substance of the heart.

Caries, a disease of bones, somewhat resembling the ulceration of soft parts: adj. *carious.*

Carotid, arteries which supply the head with blood. See p. 18.

Cartilage, gristle: adj. *cartilaginous.*

Catarrh, an inflammatory affection of the membrane of the air-passages, from cold: adj. *catarrhal.*

Cellular, consisting of cells: *cellular membrane*, a membrane which serves to connect together the various parts of the body.

Cerebellum, a portion of the contents of the skull, differing in structure from the *cerebrum* or true brain, and lodged in the hollow of the *occipital* bone: adj. *cerebellic.*

Cerebral, relating to the *cerebrum* or brain. Sometimes employed in this work as synonymous with *cerebro-spinal*, which includes both brain and spinal marrow.

Cervical, belonging to the neck.

Chalybeate, a term applied to various preparations of *iron* used in medicine.

Chorea, a convulsive disease, commonly called St. Vitus' dance.

Chronic, of long duration: see *acute.*

Chyle, the milky fluid formed by the process of *chylification*, from the *chyme* or pulpy mass of digested aliment, by the

* All the arteries of the body, with one exception, originate from the AORTA, and transmit ARTERIAL blood. THE PULMONARY ARTERY springs from the right ventricle of the heart, and carries VENOUS blood directly to the lungs, for arterialization: while the PULMONARY VEINS, conveying the ARTERIALIZED BLOOD again to the heart from the lungs, thus constitute a similar exception in the VENOUS SYSTEM.

agency of the *bile* and *pancreatic* fluid in the *duodenum*.

Chylopoietic, a term applied to the organs which *prepare* the *chyle*.

Cinchona, a South American tree, which supplies the *Peruvian bark*. The bark of three species is employed in medicine,—that of the *cordifolia*,—*pale*;—*lancifolia*, *yellow*;—and *oblongifolia*, *red*.

Coagulum, a clot: hence *coagulated* blood.

Coecum, an expanded portion of bowel lodged in the hollow of the right flank, and forming the commencement, hence called the head, of the *Colon*.

Colchicum, the Meadow-Saffron: supposed to be the active ingredient of the *eau médicinale*, and other empirical remedies for gout.

Colon, or large intestine, where the conversion of the refuse of the food into excrement,—the process of *fecification*,—is executed.

Coma, a state of profound stupor: adj. *comatose*.

Combustion, the process of decomposition by fire.

Concretion, synonymous with *calculus*, a stone-like substance. Hence the terms, biliary, alvine or intestinal, and urinary concretion, are employed to designate a *stone*, in the gall-bag, bowels, and bladder.

Congenital, existing from birth.

Congestion, a loaded state: hence *congested*, and *congestive*, applied to organs preternaturally loaded or distended.

Constipation, costiveness:—*constipate*, to induce costiveness.

Contagion, the process of communication of a disease by *contact*: adj. *contagious*.

Contra-indicate, to forbid the use of a remedy.

Contused, bruised: *contusion*, a bruise.

Convolution, a fold of the brain or of the bowels.

Counter-irritant, an agent employed to subdue internal, by exciting external irritation,—to produce *counter-irritation*.

Cranium, the skull: adj. *cranial*.

Cuticle, scarf-skin—*epidermis*: adj. *cuticular*.

Cynanche, a genus of diseases in Cullen's Nosology; comprehending inflammation of the tonsil, throat, windpipe, pharynx, and parotid gland: nearly synonymous with *Angina*.

Decapillation, removal of the hair.

Decapitation, beheading.

Decarbonized, deprived of carbon.

Decomposition, the separation of a body into its original elements.

Deglutition, the act of swallowing.

Dentition, the process of teething.

Depletion, the act of emptying. Hence blood-letting and purgatives are *depletive* remedies.

Desiccation, the act of drying.

Desquammation, the act of throwing off the *cuticle* or scarf-skin.

Development, an unfolding.

Diabetes, a morbid affection of the kidneys, characterized by an inordinate secretion of urine: adj. *diabetic*.

Diagnosis, the discrimination of one disease from another; adj. *diagnostic*.

Diaphoretic, synonymous with *sudorific*.

Diaphragm, a powerful muscle called the *midriff*, which separates the cavities of the chest and belly; and is an important organ in respiration: adj. *diaphragmatic*.

Diaphragmitis, inflammation of the *Diaphragm*.

Diarrhœa, looseness of the bowels.

Dietetic, relating to diet.

Digestive, relating to digestion. Thus *digestive* is synonymous with *intestinal*, when applied to the stomach and bowels.

Digitalis, the purple Foxglove.

Diluent, a remedy with which to dilute.

Diuretic, a remedy which provokes an increased flow of urine.

Drastic, active, a term commonly applied to violent purgatives, as *scammony* and *gamboge*.

Duodenum, the commencement of the small intestine, communicating with the stomach by the lower or *pyloric*

orifice of the latter organ: adj. *duodenal.*

Dysentery, the bloody flux: adj. *dysenteric.*

Dyspepsy, *dypepsia*, indigestion: adj. *dyspeptic.*

Dyspnœa, difficulty of breathing.

Eczema, a disease of the skin, consisting in the eruption of small vesicles closely crowded, with scarcely any inflammation round their bases.

Efflorescence, a diffused redness of the skin.

Effluvium, plur. *Effluvia*, minute particles given off by various bodies.

Effusion, pouring out, nearly synonymous with *extravasation:* adj. *effused.*

Endemic, a term applied to diseases resulting from a local cause, as the ague of the fen-districts: while

Epidemic diseases are produced by an occasionally operating cause; as influenza, by the condition of the atmosphere in certain seasons.

Eruption, a breaking out: adj. *eruptive.*

Erysipelas, a cutaneous disease, vulgarly named St. Anthony's fire: adj. *erysipelatous.*

Erythema, an affection of the skin, consisting in an efflorescence, or continuous redness, with constitutional derangement: adj. *erythematous.*

Eustachian, applied to designate a tube which conveys air from the back of the mouth to the interior of the ear. One variety of deafness results from its obstruction.

Exacerbation, increased severity.

Excision, synonymous with *extirpation*, a cutting out.

Excretion, the act of separating and ejecting various substances from the body. Hence the term *excrement*, the matter thrown off: and the adj. *excreting.*

Exhalant, a term applied to minute vessels which perform the process of *exhalation* on the different surfaces of the body: from *exhale*, to throw off a vapour.

Exhibition, nearly synonymous with the term, *administration*, of remedies.

Expectoration, the act of ejecting from from the lungs: *expectorant*, a remedy which enables one to *expectorate* more readily.

Expiration, the act of expelling air from the lungs.

Extraneous, foreign.

Extravasation, the pouring out of a fluid from a vessel which contained it: hence the term, *extravasated* blood or serum.

Exudation, the act of oozing through pores.

Facial, relating to the face.

Fauces, the summit of the throat: adj. *faucial.*

Febrile, feverish.

Feces, matters excreted from the bowels: see *colon:* adj. *fecal.*

Fecification, the process whereby the refuse of the food is converted into excrement.

Forensic, belonging to a court of judicature. *Medical Jurisprudence*, the *State-Medicine* of the Germans, comprehends *Forensic Medicine* and *Medical Police.*

Frontal, belonging to the forehead: hence *frontal sinus*, a cavity in the *frontal bone.*

Function, the office of an organ. Hence *functional* disorder implies merely deranged action.

Galvanism, a modification of electricity, so named from *Galvani*, its discoverer.

Gangrene, incipient mortification: adj. *gangrenous.*

Gas, a permanently aërial fluid: adj *gaseous. Aëriform* is here applied to substances which occasionally assume an *aërial* character.

Gastric, relating to the stomach: hence *gastric juice*, a fluid the existence of which is doubtful.

Gelatinous, from *gelatine*, jelly.

Gland, an organ destined for secretion, as the liver: or to effect some unknown change in the absorbed fluids, as the mesenteric glands. Hence the distinction into *secretory* and *absorbent* glands: adj. *glandular.*

Glottis, the aperture into the *Larynx*, guarded by a valve, called *Epiglottis.*

Guaiacum, the resin of the tree which supplies the Lignum Vitæ. A solution of it in ammoniated spirit, *Volatile tincture of Guaiacum*, is a popular remedy in chronic rheumatism.

Hemorrhage, a flow of blood: adj. *hemorrhagic.*
Hepatic, relating to the liver.
Hernia, vulgarly called a rupture, of the belly.
Hydrogen, inflammable air, one of the constituents of water.
Hydrothorax, dropsy of the chest.
Hymenopterous, employed to designate an order of insects possessing four *membrane-like* wings; and commonly a sting.
Hypertrophy, excess of nutrition,—enlargement.
Hypochondriasm, melancholy: from its supposed origin in the liver and spleen, which are situated in the *hypochondriac regions.*
Hypothesis, supposition: adj. *hypothetical.*
Hysteria, an hysterical affection.

Idiopathic, primary,—not dependent on another.
Impetus, a violent effort or impulse.
Incised, cut: *incision*, a cut.
Infection, communication of a disease without personal contact: *infectious*, relating to,—*infected* an object acted on by,—*infection.*
Ingestion, the act of taking into the stomach.
Injection, often employed as synonymous with glyster: *injected*, congested,—loaded with blood.
Intercostal, between the ribs.
Intestinal, relating to the *intestines* or bowels. The *intestinal canal* implies the whole track from the *pharynx*, or summit of the gullet, to the termination of the *rectum* at the *anus.*
Inspiration, the act of receiving air into the lungs.
Irrespirable, unfit for respiration.

Jugular, belonging to the throat.

Lacerated, torn.
Lachrymal, from *lachryma*, a tear. *Lachrymal Gland*, a gland situated above the eye; which secretes the tears. *Lachrymal duct*, a tube which conveys them from the eye to the nostril.
Laryngotomy, the formation of an opening into the
Larynx, an apparatus fixed to the summit of the windpipe, and constituting the organ of voice. It consists of the *thyroid cartilage*, the *cricoid*, the two *arytenoid*, and *epiglottis*: *Laryngeal*, relating to,—*Laryngitis*, inflammation of,—the *larynx.*
Lesion, a morbid alteration, from injury or disease.
Lumbar, relative to the loins: hence *lumbar abscess.*

Malformation, original defect in structure.
Mammary, relating to the female breast, from *mamma*: hence *Mammalia*, and *Mammifera*, applied to the order of *Vertebrated* animals which suckle their young.
Mania, raving madness: adj. *maniacal.*
Maxillary, relating to the jaws: *maxillary sinus*, a large cavity in the upper jaw-bone.
Membranous, relating to *Membrane*, an expanded tissue, which covers and connects the different organs.
Mesentery, a duplicature of membrane, connecting the intestines to the spine, and enclosing the *mesenteric* glands and vessels.
Miasm, plur. *Miasmata*, a particle emanating from a vegetable body in a state of decay, or from an animal, in that of decomposition or disease.
Monograph, a treatise on one subject.
Morbid, diseased.
Mucus, a fluid secreted by certain membranes, as that of the bronchia and nostrils,—hence called, *mucous* membranes.

Narcotic, a stupifying remedy, as opium.
Nephritic, relating to the kidney: *Nephritis*, inflammation of the kidney.

Nerve, a white chord, arising from the brain or spinal marrow, and endowing with sensation, or the power of motion* the various parts of the body: adj. *nervous*, applied also to any morbid affection of the nervous system.

Neuralgia, see p. 244: adj. *neuralgic*.

Neutral Salt, a saline compound, resulting from the union of an acid and alkali in certain proportions, as nitrate of potash (salt petre).

Nutrient, conveying *nutrition*.

Occiput, the hindhead: adj. *occipital*.

Œdema, dropsical swelling: adj. *œdematous*.

Œsophagus, the gullet: adj. *œsophogeal*.

Omentum, the cawl: adj. *omental*.

Opium, the inspissated juice of the *Papaver somniferum*: *laudanum*, a solution of it in spirits of wine: *opiate*, a remedy containing *opium*.

Organic, relating to an organ: *organic disease*, a lesion of structure.

Ossification, conversion into bone: *osseous*, bony: *ossified*, converted into bone.

Oxygen, vital air, a constituent of the atmosphere, and of water: *oxydation*, the union of oxygen with a body: *oxide*, or *oxyd*, the product of such union.

Oxymuriate of mercury, corrosive sublimate.

Pancreas, the sweet-bread, a gland situated in the belly, and secreting the *pancreatic fluid*. See *bile*.

Papillæ, small pointed eminences seen upon the tongue: adj. *papillary*.

Paralysis, palsy: adj. *paralytic*.

Parasitic, an animal or vegetable, supporting itself on another.

Paroxysm, a fit.

Pathology, the doctrine of morbid affections: *pathologist*, a prosecutor of *pathological* science.

Pelvis. The trunk of the body is divided, by anatomists, into three cavities,—the *thorax*, the *abdomen*, and *pelvis*. The *pelvic viscera*, organs contained in the *pelvis*, are the rectum, bladder, and uterus in the female.

Pericardium, the *serous* membrane containing the heart: *pericarditis*, inflammation of it: see p. 308.

Peritoneum, the *serous* membrane lining the abdominal muscles, and investing the bowels: *peritonitis*, *peritoneal* inflammation.

Pharynx, the membranous bag connecting the *fauces* with the *gullet*: adj. *pharyngeal*: *pharyngitis*, inflammation of the *Pharynx*.

Phrenology, doctrine of the mind: *phrenologist*, a student of *phrenological* science.

Phthisis, decline,—consumption: adj. *phthisical*.

Physiology, the doctrine of functions: *physiologist*, a prosecutor of *physiological* science.

Plethora, fulness of blood: adj. *plethoric*.

Pleura, the *serous* membrane lining the chest and covering the lungs: *pleuritis*, pleurisy,—*pleuritic* inflammation.

Pleuropneumony, general inflammation of the lungs and pleura.

Pneumonitis,† *pneumonia*, inflammation of the lungs: adj. *pneumonic*.

Prognosis, *prognostication* of a result.

Puerperal, child-bearing.

Pulmonary, relating to the lungs: *pulmonic*, a subject with diseased lungs.

Pus, matter, a morbid secretion from an ulcerated or inflamed surface: adj. *purulent*.

Pustule, an elevation of the *cuticle*, containing *pus*: adj. *pustular*.

Rabid, from *rabies*, madness; applied to animals affected with *Hydrophobia*, see p. 227.

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* Every spinal nerve is composed of two filaments: one arising from the anterior, and the other, from the posterior pillar of the spinal chord. The former appears, from the experiments of Mr. C. Bell, to be a nerve of MOTION; the LATTER, of SENSATION.

† Since this work was sent to press, the author has found the term, PNEUMONITIS, in the DICTIONAIRE DES SCIENCES MÉDICALES.

Rectum, the lower extremity of the intestinal canal.
Refrigerant, a cooling remedy.
Renal, relating to the kidney.
Respiration, the act of breathing: adj. *respiratory*.
Resuscitation, the act of revival from apparent death.
Roseola, a rose-coloured efflorescence on the skin.

Saccharine, relating to sugar.
Sanguineous, relating to the blood.
Scrofula,—struma, kings'-evil: adj. *scrofulous,—strumous*.
Secretion, the separation of a fluid from the mass of blood: adj. *secretory*.
Sedative, a remedy which subdues increased action, and soothes pain.
Seneka, the root of a plant, the *Polygala senega*.
Senile, relating to old age.
Serum, the watery part of the blood: adj. *serous*.
Sinapism, a *cataplasm*, or poultice, of mustard. See p. 219.
Sinus, a cavity; as the *sinus* of the *frontal bone*.
Spasm, cramp, the involuntary contraction of a muscle: adj. *spasmodic*.
Spine, see *vertebra*: adj. *spinal*.
Spleen, the milt: adj. *splenic*.
Stethoscope, an instrument intended, as its etymology indicates, for *examination* of the *chest*.
Stimulant, an exciting remedy.
Stricture, the narrowing of a canal. *Strictures* are of two kinds,—*spasmodic*, and *permanent*.
Submuriate of mercury, calomel.
Sudorific,—diaphoretic, a remedy to promote sweating.
Sulphate, a compound of an alkaline, earthy, or metallic base with *sulphuric acid*,—oil of vitriol.
Sympathy, the suffering of an organ, from irritation existing in some other: adj. *sympathetic*.
Symptomatic, opposed to *idiopathic*.
Syncope, a fainting-fit.
Synocha, inflammatory fever; *Synochus*. low fever: adj. *synochal;—synochous*.

Temporal, relating to the temples.
Tendon, the sinew of a muscle: adj. *tendinous*.
Therapeutic, relating to the cure of diseases.
Thorax, the chest: adj. *thoracic*.
Thyroid cartilage, see *Larynx*. *Thyroid gland*, a body situated in front of the windpipe. See p. 330.
Tænia,* a genus of intestinal worms. The tænia *lata* is now removed into a new genus, the *Bothriocephalus*. See Rhind's *Treatise*, p. 59.
Tonic, a strengthening remedy.
Tonsils, two glands situated in the *fauces*, called also *Amygdalæ* or *almonds*: adj. *tonsillar*.
Topical, local, as opposed to *constitutional*.
Toxicology, the doctrine of poisons: adj. *toxicological*.
Trachea, the windpipe: adj. *tracheal*. *Tracheitis*, inflammation of the windpipe,—croup.
Tracheotomy, the formation of an opening in the windpipe for the admission of air, in obstructed respiration.
Trichocephalus, a genus of intestinal worms, formerly the *Trichuris*: See Rhind's *Treatise*, p. 38.
Tubercle, see p. 312, *tubercular*, relating to,—*tuberculated*, affected with,—*tubercles*.
Tumidity, a state of distension: *tumid*, swollen.
Tumour, a swelling: *tumified*, swollen.
Tympanitis, a drum-like distension of the belly, from flatulence: adj. *tympanitic*.
Typhus, low fever: adj. *typhoid*.

Uterus, the womb: adj. *uterine*.

* The Tabular View of the Intestinal Worms, promised at p. 117, the author has not been able satisfactorily to arrange. With respect to the genus, TÆNIA, Mr. Rhind has in his generally valuable TREATISE, rather aggravated than removed, the confusion which previously existed. There are some excellent papers on this subject by Mr. Gray, in the XI. Vol. of THE LONDON MEDICAL REPOSITORY.

Valve, a duplicature of membrane, placed at the origin of the two large arteries, and at the opening of communication between the cavities of the heart, to prevent the regress of the blood:—adj. *valvular*.

Variolous, relating to small-pox, as *vaccine*, to cow-pox.

Vascular, relating to vessels.

Vein, a vessel which carries back the *venous* blood from all parts to the heart.

Ventricles, two muscular cavities of the heart, which receive their blood from the *auricles*; and transmit it,—the right, into the *pulmonary artery*;—the left, into the *aorta*.—Cavities in the interior of the brain; which form the receptacle of the fluid in *Hydrocephalus*, dropsy of the brain.

Vertebrae, the bones composing the *spine*, the *spinal* or *vertebral column*; which is divided into three portions,—the *cervical*, consisting of seven bones:—the *dorsal*, twelve: the *lumbar*, five. The *spinal* or *vertebral* canal is the cavity formed by the junction of the *vertebrae*, and filled by the *spinal marrow or chord*. The animals which possess a spine, are called *Vertebrated Animals*.

Vesicle, a small bladder: adj. *vesicular*.

Viscus, an internal organ: plur. *viscera*: adj. *visceral*.

Vulnerary, resulting from a wound, synonymous with *traumatic*.

Zoologist, a student of *Zoology*, the science of beings endowed with life. In its more extended signification, it comprehends the study of animals and plants. But in common language, it is exclusively restricted to the investigation of *animal* bodies.

THE END.

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